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General Articles

GENERAL IDEAS IN MEDICINE*

WILFRED TROTTER, M.S., F.R.S., F.R.C.S.

SERGEANT SURGEON TO THE KING; SURGEON, UNIVERSITY COLLEGE HOSPITAL

On August 2nd, 1775, John Hunter wrote to Edward Jenner a short letter, which contained what are perhaps to-day his best-known words. Jenner had asked for his opinion on a problem of natural history, and Hunter suggests that the question could be settled experimentally; and then he breaks out into one of his brusque, impatient phrases, "But why think, why not try the experiment?" In this small outburst the piety of later times has sometimes seen profundities it might have surprised its author to be notified of, and has even given to it the status of an aphorism pregnant with the wisdom of the newer world. We may incline to regard these rather high-flown interpretations as belonging to the sphere of Hunterian Orators, where such tropical growths naturally bloom. Nevertheless, the phrase on which they are founded is a text well suited to guide some reflections on the relation of thought and action in the advancement of knowledge. Any such discussion must traverse treacherous ground, and we should therefore not be afraid of limiting ourselves to elementary considerations or of defining our terms with care.

In the life story of mankind two implements of knowledge can be plainly seen at work. I have already called them thought and action, and our first tasks must be to make clear what is meant by them and to identify some of the many names by which they may be known. By action as contrasted with thought I mean man's direct dealings with phenomena by way of observation and experiment, or in the broadest sense of the word, experience. By thought as contrasted with action I mean the rational contemplation of experience and the integration of it into generalised expressions; I shall speak of the use of reason or of the rational mind and of abstract thought as having the same meaning.

* The Lloyd Roberts Lecture delivered at the House of the Royal Society of Medicine, September 30th. Reproduced from the *British Medical Journal*, October 5th, 1935, by permission of the Editor and of the Lecturer.

It is one of the most curious features in the history of man that his sole uniquely human character, the rational mind, has borne a relation to the advance of knowledge that has always been capricious, often ambiguous, and sometimes hostile. It seems so natural to take it for granted that reason has been the steady friend of truth that a statement of the facts has an air of paradox. If, however, we are to fight shy of the paradoxical, no inquiry into the history of knowledge will take us far. Not less surprising than the enigmatic relation of reason to truth is perhaps the lateness of the date at which it first seems to have occurred to man that the intellect could be deliberately used. Cultures of great vigour and elaboration had climbed to their zenith and died before we get our first glimpse of reason at work on human destiny in the great days of ancient Greece. There we see the rare spectacle of a new and powerful instrument in hands fully competent for its use. The world has come to agree that there never has been anything else quite like the efflorescence produced by the happy union of the Greeks' discovery of abstract thought, and the exulting brilliance with which they applied it. Up to that moment man's only implements for discovery and for preserving its fruits were the practical arts. The characteristic limitations of that method had made him the deferential slave of phenomena; henceforth he was to be in some sense their conscious master. It will be our task to try to get a clear idea of the instrument that could produce this revolution, and then to trace its influence in later times.

The Nature of Abstract Thought

The discovery that we first clearly find in use by the Greeks was that the qualities of objects can be thought of as separable from them. Such abstracted qualities can be recombined and handled within the mind with a facility and fruitfulness impossible in our dealings with actual objects themselves. If complete abstraction of the qualities of the outer world were possible our reconstruction of them in thought would be as valid as the originals, and a true experimental science within the mind would be feasible. It seems probable that the Greeks thought this to be the case, and excusably in the first flush of their discovery. That error has beset the progress of knowledge for two-and-a-half millennia, and

compels us to regard the discovery of abstract thought as in some degree a Grecian gift in the old ambiguous sense. For it is a stubborn, though, unfortunately, an elusive, fact that valid abstraction from phenomena in general is only a limited possibility. As far as we know number is the only quality that can be completely abstracted from objects, so that the experience of number within the mind is just as valid as the experience of number attached to external objects, and of course far more easily subject to experiment. Thus the science of number is the single science that is at once fully abstract and fully experimental. The science of spatial relations runs it very close, and it was two thousand years or more before suspicion arose that the abstract space of the mind was not exactly the same thing as space in general. The Greeks were quick to see how well number and space lent themselves to the new method, and very obviously reserved a special reverence for the two corresponding sciences—not always without queer results.

As we move away from number and space abstract thinking becomes less and less able to represent usefully the actual world. In biology the most elaborate abstractions are apt to be mere crude diagrams, and, through disproportionate emphasis, easily pass into caricature. The decline in the effectiveness of abstraction with increase in the multiformity of the phenomena is a familiar fact. The implement so useful to Galileo in attacking mechanics is scarcely recognisable in the hands of Herbert Spencer generalising biology, even if we grant the powers of the two men to have been equal. It is not, however, the limitations of the method that concern us chiefly here. What is more important in the history of science and of medicine is the tendency of abstract thinking to interpose between the inquirer and the phenomena and to give a diminishing importance to the latter. , One universal law has always governed the evolution of knowledge; it is that progress is directly proportional to the closeness of the relation of the inquirer and the facts. Now facts unfortunately are not the natural diet of the mind. They are laborious and often undignified to collect; they are apt to be formless, ugly, and even nasty; they dirty the fingers, they smell and sometimes bite. How different from the noble shapely, and above all well behaved, conceptions of the mind, which are so manifestly of a higher order of reality! The fastidious Greeks were very sensitive to this difference and not a little apt to look down on the mere base collection of facts. Even the tremendous Aristotle was not quite untouched by this intellectual queasiness.

Reason Enthroned

Faith in the ultimate supremacy of reason must tend towards a dogmatic rationalism. This tendency was not without its ill-effects on the pursuit of knowledge by the ancient Greeks, but was to a great extent compensated for by their unique curiosity and aptitude for free thought. It could not keep such a people out of contact with facts, as we see repeatedly throughout the long period from the clinical observations of Hippocrates and the biology of Aristotle down to the experimental physiology of Galen. But when it was handed on to minds less happily situated and less richly endowed, and had been developed into the flawless and invulnerable rationality of the scholastics, rationalism became a much more formidable barrier to the progress of knowledge than it had been as the relatively innocent foible of the Greeks. Mediæval rationalism was strong enough to embody in a reasonable structure all known facts. It needed no new ones, and could scarcely have regarded the collection of such as other than foolish and unnecessary.

One of the most deeply enigmatic events in human history is that after the time of Galen science, and with it medicine, underwent no large change but that of decline for a full thousand years. I shall not yield to the temptation to speculate about the causes of this astonishing coma of the human spirit. Many explanations of it have been propounded, and have been for the most part as confident in their presentation as they were incredible in their substance. While bluntly admitting that the fact is unexplained, we may note that in its circumstances there were features that may have been related to it. The most obvious of these was the development of dogmatic rationalism into a system which could give a coherent and consistent account of nature, of man, of the spiritual world, and of any other kind of world that might be supposed to exist. The second and far the more mysterious feature was a lapse of that kind of curiosity for the outer world that makes phenomena interesting in themselves. This is the fundamental impulse of science; without it science is impossible, with it science cannot fail ultimately to appear. Whether or not we may suppose the eclipse of curiosity to have been causally related to the long night of science, it is certain that no dawn could have broken until that eclipse had ended.

The way in which science was born again confirms this principle. It has been shown by Singer that the renaissance of science in the sixteenth century had been prepared for by a long period, during which a reawakened interest

in the outer world was gathering momentum. He takes the memorable year 1543, in which were published the masterpieces of Vesalius and Copernicus,[1] as a convenient date to mark the first full light of the scientific renaissance; and he gives evidence of a steadily growing body of work produced in the previous two hundred years that proves interest in external phenomena once more to have been alive. Thus the renaissance of science was of necessity and in fact preceded by a renaissance of curiosity.[2]

Rationalism at the Renaissance and After

The revival of science was not due to or accompanied by any corresponding decline in rationalism. The giants of the Renaissance appear to have been untroubled by any suspicion that reason was not the ultimate arbiter of truth. The symmetry, the acceptability, in short the reasonableness, of a doctrine still seemed the major and final evidence of its truth. No doubt had arisen of the assumption that the sense of rationality corresponds with a similar order in the outer world. Medical theory could still base itself on the four elements, the four humours, and the four temperaments as fundamental truths; and it was long before astronomy ceased to prove that the orbit of a planet must be a circle because that is the perfect curve. All that had happened was that facts had re-established their birthright. There were no qualms about how troublesome these upstarts were likely to become. They were, of course, to prove a decisive factor in the situation.

From the time of the Renaissance the accumulation of fact was to proceed at first with a moderate, but at length with an overwhelming acceleration. The faith in reason underwent no debilitation from within, but began to suffer a certain dilapidating erosion from without. Rationalism lost its scholastic severity and perhaps gained thereby in attractiveness. The change introduces us to a third period in its evolution, which in contrast with the ingenuous rationalism of the Greeks and the austere rationalism of the Middle Ages we might call latitudinarian. By this time medicine had become distinct enough for us to consider it more or less apart from science in general. We have reached the period lying between the massive discoveries associated with the names of Vesalius, Servetus and Harvey, on the one hand, and the not less revolutionary work of Pasteur and Lister on the other. Here we have a stretch of roughly 200 years, comprising the eighteenth and about half of each of the adjacent centuries. Discovery, of course, proceeded actively throughout this time, and the accumulation of knowledge soon became enormous. The causation of disease was still obscure, for no single fundamental element of it had been established. The field therefore was as free to the theorist as it had been in ancient Greece, but there were two fresh elements. These were, first, the now very great store of facts, and, secondly, the decline in rationalistic rigour.

The characteristic feature of the period was the exuberance with which doctrine flourished. Almost every eminent medical personage—who might well at the same time be making solid contributions of fact to medicine—was the exponent of a theoretical system of disease. This system, devised by its inventor according to some inspirational method of his own, was often as detached from reality as it was precise and dogmatic. It is impossible to review the innumerable systems that sprang into life and often so surprisingly survived; I can only mention a few names taken almost at random from Garrison's well-known work,[3] and trust to be able to convey some of the quality of their doctrines.

Early in our period there is Georg Ernst Stahl, whose life almost exactly corresponds with the interval between the death of Harvey and the birth of Hunter. He taught an animism which regarded the body as a mechanical puppet, whose functions were maintained by the direct action of the soul. Misbehaviour of the soul was therefore the cause of bodily disease. It seemed to be a necessary consequence of this theory that drugs could have no action on the body, and like a good rationalist Stahl denied that they had. His responsibility for the many animists and vitalists who followed him is perhaps less heavy than for the phlogiston theory with which he burdened chemists, for this theory is perhaps the most perfect example in the world of ideas of the mysterious viability of the false. Then there is John Brown, whose life coincides roughly in time with that of Hunter, and who was the author of the famous Brunonian system. This product of reason is said to have been remarkably complete and consistent; it divided diseases into sthenic and asthenic, and treated them respectively with opium and alcohol, drugs to which Brown himself, less tough than his system, early succumbed.

The air of caricature never fails to show itself in the products of reason applied relentlessly and without correction. The observation of clinical facts would seem to be a pursuit of the physician as harmless as it is indispensable. Reason, however, could scarcely stop at so elementary a phase as this, and it seemed irresistibly rational to certain minds that diseases should be as fully classifiable as are

beetles and butterflies. This doctrine found its most eminent cultivator in the great Sydenham, but bore perhaps its richest fruit in the hands of Boissier de Sauvages. In his *Nosologia Methodica*, published in 1768, the year of Hunter's appointment to St. George's, this Linnæus of the bedside grouped diseases into ten classes, 295 genera, and 2,400 species. Towards the end of our period these particular developments met an opponent in Broussais, who lived till Lister was eleven and Pasteur 16. For Broussais disease in the sense of the nosologist had no existence. Diseases were for him consequences of local irritation and resulted in gastro-enteritis, which was the essential pathological lesion of all maladies. Broussais' quality is shown by his aphorism *La nature n'a aucun pouvoir de guérison naturelle*: believing this, he knew that recovery depended solely on the exertions of the physician. Since the condition he had to contend with was always an irritation and could be met by reducing the patient, he set himself to starve and bleed with a dreadful rigour. The lapse of a hundred years has made this doctrine seem no more than gruesome balderdash, but it was not without plausibility for the contemporary world. In fact, no less a surgeon than the great Dupuytren was a believer, and was accustomed to add to his mere surgical powers of reducing his patients the sterner measures of his colleague.

If these instances give a fair sample of what the intellect was doing for medicine for 200 years, it is not perhaps surprising to find Hunter about the middle of that period exclaiming impatiently, "Why think?"

The Decline of Rationalism in Medicine

When we pass on to consider the state of affairs that obtains at present the first thing that strikes us is that no one is likely to make that exclamation now. I can imagine no reproach less likely to be needed. A reorientation has occurred towards what can be done by rational speculation for the advancement of knowledge. We can scarcely bring ourselves to listen to anyone who is not actually engaged in investigating facts, and to call an author speculative is a severe censure.

This change has been the result not of deliberate choice but of the pressure of circumstances. These circumstances have been the overwhelming success of the method of experiment in recent times, and the fabulous rate at which the accumulation of ascertained fact has progressed. There can be no reasonable doubt that the decline in the influence of rational speculation has coincided with a period in which the increase of knowledge has been rapid beyond example. Even if we can be sure, as I think we can, that the increase of knowledge was in no sense caused by the decline in speculation, we are left with but another confirmation of a conclusion that has become increasingly clear throughout this discussion. That conclusion is that at no time right up to the present day has medical doctrine borne any close and functional relation with medical discovery. If we handle this rule without trying to enforce it absolutely, and with a reasonable breadth of interpretation, we shall find it applies to every period of medical history. Although this conception is not generally and consciously recognised, and as far as I know has never even been specifically enunciated, it has long been acted on both in medicine and in science. There can therefore be no purpose in failing to admit that, in general, discovery has been the result of action rather than of thought. Fact has led to fact, observation to observation, experiment to experiment; and there has been little or no long range guidance from rational contemplation and foresight. The relation of doctrine and discovery has not only been without co-operation, it has often been hostile; for the progress of knowledge has again and again been arrested or embarrassed by supposedly rational arguments and accepted principles. The historian is apt to be indignant at the obstacles to new knowledge offered by the censure of theologians and the persecution of ecclesiastics. Theologian and ecclesiastic have no doubt done their best, but the effect of their utmost zeal has been insignificant in comparison with that resulting from the conscientious use of the rational mind.

The Function of Rational Thought in Medicine

If we accept the view that the cultivation of the theoretical side of medicine has on the whole delayed progress, should we not rejoice in the fact that that kind of study has been almost wholly destroyed by the pressure of experiment and its great success? In that case we should be able to give a definite answer to the Hunterian interrogation with which I began. Why think? Why indeed! The situation, however, is not quite so simple as to be settled in that way, and there are at least two strong reasons why a permanent abeyance of the theoretical, speculative, and rational element in the pursuit of medicine could not be regarded as wholly satisfactory.

In the first place experience seems to show that a branch of knowledge strictly limited to experiment and without any kind of speculative admixture tends in time to lose its inspiration and drift into a dry and rigid orthodoxy. Some such decline was perceptible in the physical sciences towards the end of the nineteenth century, and there can be little doubt that a strict

reliance on experiment alone would in the long run have a similar deadening effect on scientific medicine. In the second place medicine is, as we shall point out more fully later, a composite subject. One of its elements is an experimental science, but a large part of it obeys the very different discipline of a practical art. In consequence it has often to deal with and act upon incompletely definable situations, and to develop the faculty of practical judgment on imperfect evidence—an activity characteristically absent from an experimental science. As long, therefore, as medicine continues to be so largely an activity of a non-scientific kind, every faculty of the active, rational mind is to be desired in the practice of it. But as we have already been at pains to point out, the exercise of the rational mind in the attempt to integrate and theorise medicine has been abundantly tried, and has always proved singularly ineffective, if not harmful.

The issue from this dilemma is a very obvious one, although one which there seems to be a strange disinclination to take. It lies in dispersing the delusion that practical thought is easy, needs no training or precaution, and is available forthwith for anyone who turns his mind to it. Psychology has shown how little these expectations are likely to be realised, but it has not accepted the complementary duty on the positive side of producing a definite method of elementary instruction in effective thought. Among the reproaches, just and unjust, to which that science is exposed this is one of the more serious, that it has failed to show us by precept, and especially perhaps by example, how to think. It would be presumptuous in me to pretend to the ability even to enter on such a task, but one or two fundamental principles may be mentioned as the more obvious of the foundations of such an undertaking.

The physical organs and aptitudes of the body do their work only under definite conditions, and in using them no one doubts the need for practice and for acquiring a sound technique. The intellect, on the other hand, seems to its user to be an apparatus already perfected, needing no exercise or instruction, but sprung into being ready to carry out its functions without flaw or friction. In actual fact it is as much a biological product as the bodily organs, and subject to similar conditioned functioning; it is as squeamish in its way as the stomach, and as selective as the kidney or choroid plexus. Some of the restrictions on the working of the rational mind are probably structural and therefore inveterate, like the inability to conceive space in more than three dimensions and possibly others we do not even suspect. The practically important ones, however, are functional, and can be reduced or in some degree eluded through awareness and training. It is a rather crude but substantially true description of these obstacles to free thought to say they are all due, more or less directly, to the interpenetration of all thinking—even the most completely abstract—by the needs, the fears, the wishes of the thinker. The dispassionate intellect, the open mind, the unprejudiced observer, exist in an exact sense only in a sort of intellectualist folklore; states even approaching them cannot be reached without a moral and emotional effort most of us cannot or will not make. There are few terms in such deep disgrace nowadays as altruism, and perhaps justly so, for it has been the excuse for a good deal of silliness. Nevertheless, something in the nature of altruism in the plain sense of the word and with no mystical implication is necessary for effective thought. For there can be no approach to truth without some threat to the thinker's personality.

Simple Tasks for Thought in Medicine

Happily these altitudes are as much beyond my theme as beyond my capacity, and I turn with relief to a humbler task. We shall probably all agree that medicine permits and calls for a great deal of practical thinking. The first topic that suggests itself as in some special need of sound and rational doctrine happens also to be the most elementary; it is that of the fundamental definition of what precisely medicine and the work of the doctor are. We are much concerned nowadays about medical education and the designing of curricula. It would appear that fundamental to all such considerations should be clear conceptions of the nature of the subject itself. This is particularly necessary and a little difficult because the subject is a composite one, and considerations very relevant to one of its elements are apt to be confusing if inadvertently applied to another. The constitutents of which medicine is made up are readily discernible: they are three—a practical art, an applied science, and an experimental science.

Medicine as a Practical Art

It is always readily agreed that medicine is an art. The indispensable task of defining precisely what that phrase means is, however, less frequently undertaken. Medicine is a practical art in the same sense as is the work of the farmer, the smith, or the joiner. When this primary stage of definition is reached it becomes clear that definite qualities and modes of activity must be possessed by this element in medicine. These are of great practical importance, and it is surprising that they have had little exact notice. Now that the prestige of

science is so high the statement that a great part of medicine still retains the status of an art is often made with a note of apology. Nothing could be less justified by a realistic sense of cultural values. The method of the practical art was the first instrument forged by man for the subjugation of chaos. At the dawn of civilisation the preservation of knowledge was far more important than its discovery. The accidental fruits of experience and the creations of genius could be saved from an infallible oblivion only by being preserved in the precepts and tradition of a practical art. The superlative need for preservation made the arts inherently conservative, for there was, and is, no unequivocal difference between the change that was progress and the change that was decay. New knowledge was therefore accepted as reluctantly as old custom was given up.

An art carries its possessions in precepts and rule of thumb which are applied to individual cases in the light of a trained judgment. It does not possess principles of general validity automatically applicable: that is the method of applied science. An art is taught first in precepts and rules, secondly in experience of its material, and thirdly—and most important—by example. The method of apprenticeship is thus the keynote of education in the practical arts, because it brings the pupil into familiar contact with his material and gives him the constant example of his teacher in the actual things he himself will ultimately have to do. English medical education has long been recognised as having a characteristic product. This quality, whether we regard it as good or bad, has been due to medicine being regarded as essentially a practical art, and to the consequent predominance of apprenticeship in some form as an educational method.

If we have grasped correctly the nature of the practical arts we shall be able to specify to some extent the attitude of mind and the kind of thinking necessary for the satisfactory practice of them. It is commonly said that one of the chief objects of medical education should be to make the student think scientifically. The saying is perhaps as good an example as could be found of the need in which medicine stands for the exercise of the critical mind. To think scientifically may be supposed to mean one of two things. First, it may signify the adoption of a general habit of thought induced in, and characteristic of, those who practise experimental science. Unfortunately, however, it is not possible to show that the scientific worker outside his job displays more wisdom, insight, and practical judgment than anyone else of the same general capacity. Secondly, to think scientifically may mean to use the kind of mental process necessary for the satisfactory pursuit of experimental science. The scientific worker among other qualities must have an especially severe standard of evidence and proof; he must draw no conclusion that is not strictly justified by the evidence, and he must be content to leave in suspense any decision for which the materials are not quite complete. Now the last thing a doctor is free to do is to exercise the scientific suspense of judgment, and he scarcely ever makes a decision that is justifiable on strictly scientific grounds. The advice to think scientifically would seem, therefore, to risk paralysing his judgment rather than activating it.

The truth appears to be that what the user of a practical art needs is less the strict and limited instrument of scientific method than what may be called a soundly cultivated judgment. This requirement is more difficult to specify and much more difficult to secure. Apart from inborn capacity, it seems to depend on familiarity with the material of the art, otherwise experience, and on a broad and sound general culture which, while including a proper awareness of science, is by no means limited to it. The ancient and honourable art of medicine is being increasingly and inevitably pressed on by applied science, and suffers as well from misunderstanding and loss of prestige. It remains, however, the backbone of medical practice and indispensable to mankind. There is therefore an especial need to-day that its characteristic mode of activity should be understood, and should not be confused with those of the other elements that make up the complex of medicine.

Medicine as Applied Science

The conversion of the practical arts into applied sciences is a characteristic and familiar process in modern civilisation. The rate at which this change is going on is often the subject of enthusiastic and even excited comment. To the sober realist, however, it is clear that the rule of science in medicine is still not much more than strictly local and much qualified. The cases are very few in which general principles can be applied to the individual instance with the direct precision of an engineer designing a dynamo. The diagnosis and treatment of errors of refraction, certain cases of bacteriological and of chemical diagnosis, and others of physical diagnosis and treatment, with the dietetic deficiencies, make up the examples of nearly pure applied science. Elsewhere methods of precision must be very strictly subject to the art of medicine if they are not to become a mere snare. The affectation of scientific exactitude in circumstances where it has no meaning is perhaps the fallacy of method to which medicine is now most exposed. When we observe

how fully the quack has assimilated the language of science it is easy to see the need for exact definitions lest we ourselves fall, with the worthiest intentions, into something not much better.

Medicine as an Experimental Science

When we turn to contemplate the element of experimental science in medicine, we find that the need for some effort of definition is not less than it is elsewhere. Experimental medicine, or, as it has been more conveniently named, clinical science, is at a stage when the clear recognition of it as an independent form of scientific activity—if such it really is—is peculiarly important. If it is a science capable of being pursued and developed as such, it is a competitor for support on equal terms with the other sciences, and occupies a field particularly likely to attract endowment.

Now it is often supposed that the case for the independence of clinical science is met by pointing out that the scientific element in medicine is merely applied physiology and applied pathology. From this not very recondite truth it is concluded that any further benefit to medicine from physiological and pathological discovery can come only from work done by professed physiologists and pathologists. This view seems to ignore the way in which the sciences are distributed and have come into being. Independent sciences have arisen in the past, not apparently according to whether people said they must or they must not, but through finding a natural field and doing good work in it. According to their fields of work the sciences can be divided in a broad and simplified way into two groups. There are what we may call the *general* sciences, such as physics and chemistry, by which phenomena of a certain *kind* are chosen for study. Then there are the sciences we may call *topical*, by which phenomena of a certain *distribution* are chosen for study. Belonging to the second group are such sciences as astronomy, meteorology, and geology. The fact that they could all be described as applied physics and chemistry does not in the least impair their continued independence. These sciences have readily assimilated new discoveries in physics and chemistry that were relevant to their work. They have, however, not been content merely to wait on progress in these sciences, but have been ready to undertake physical and chemical researches on their own account in problems presented by their material, and often with the happiest results. It is certain that meteorology and geology would not be in their present healthy state if they had not been prepared boldly to invade the realm of the physicist or chemist when occasion arose.

The analogy between the position of these disciplines and that of clinical science is close and instructive. Clinical science takes as its field the study of sick people, thus choosing a range of phenomena forming a natural group of the highest importance and interest, and no more arbitrary from the theoretical point of view than are those chosen by the meteorologist and geologist. The chief sciences that are general in the sense we have defined in regard to clinical science are physiology and pathology. While taking full advantage of any appropriate discovery in these sciences, it need no more wait on the advance of them than geology has waited on the advance of physics and chemistry, but is bound to undertake physiological and pathological researches of its own when they become relevant to its purpose. The art of medicine will long remain the chief implement of the practical doctor. Admirably adapted as it is for the conservation of knowledge it is in its very nature ill-suited for the discovery of new truth. I venture, in conclusion, to recall a classical example of this fact and its consequences.

In 1745 James Lind described the cure of scurvy by lemon juice; and in 1840 Steinhaeuser, that of rickets by cod-liver oil. If these doctrines had been enunciated by teachers of great prestige they might have become accepted clinical precepts and slowly acquired empirical stability. They did not have that good fortune. In spite of the desperate urgency of the problem of scurvy in the eighteenth century, and that of rickets in the nineteenth, no proof or disproof was established, because it is not in the nature of a practical art to seek for certainty in the scientific sense. The truth remained undistinguished among the innumerable opinions current about these diseases for 150 years in one case and eighty years in the other. As late as the admirable *Encyclopædia Britannica* of 1911, the most authoritative opinion inclined to ascribe rickets to an intestinal toxin and scurvy to an unknown microbe. The practical art of medicine alone knew the urgency of the problems, and actually for many years possessed the key to both. It was therefore in an extraordinarily favourable position for a direct attack on them. The method alone it, as an art, did not and could not possess. That belonged to physiology, which for long years had no interest in the problems, and approached them at last as it were indirectly and almost with reluctance. When the cause of scurvy was at last scientifically ascertained in the classical experiments of Holst and Fröhlich two circumstances of the discovery attract our notice. It was made 173 years after Bachstrom had categorically and correctly announced the cause of scurvy and 162 years after Lind had described its cure.

and it was made in the course of a research primarily undertaken for another purpose. It is difficult not to believe that an active clinical science, by its situation so favourably placed for a direct attack, could have saved some of these long and costly years.

References

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[2]Singer, Charles. *Studies in the History and Method of Science.* Vol. ii.

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THE SOLUTION OF ANTIMONY COMPOUNDS

F. GORDON CAWSTON, M.D. [CANTAB.]
Durban

Tartar emetic should, wherever possible, be made up in fresh saline, as changes may occur in the solution which are not readily observed. The addition of phenol controls local sepsis and pain, should the solution escape from the blood stream or be inadvertently injected into the vein-wall, but intramuscular injections cannot be recommended since less irritating preparations of antimony are available.

Among Zululand cattle the tartar emetic treatment has been handicapped by abscess formation around the jugular vein. As in human medicine, this experience might be controlled by the addition of phenol. I am informed that at present the solutions for intravenous administration of tartar emetic for nagana in Zululand have no phenol added to them.

Where repeated doses of a ½ per cent. solution of phenol are given, as in vaccine therapy, consideration must be paid to the possibility of carbolic-acid poisoning, but this risk would seem to be a small one.

Stibilase and Trystibine are derivatives of trivalent antimony which are less irritating than tartar emetic in solution, though they appear to be superior in action for both *schistosomiasis* and *trypanosomiasis*. Though intended for intravenous injection it is possible that the addition of phenol to the fresh solution might render them even less irritating to local tissues. Trystibine has been used for *Trypanosoma vivax* infection in North Africa and is being tested for the local trypanosome infection in Mauritius.

Reference.—Manual of Tropical Medicine. Castellani & Chalmers, page 2174.

When a bullock and a heifer invaded a Sheffield library many books were knocked down. The first book picked up from the floor by an assistant was entitled "The Questing Beast."

Clinical Communication

ACUTE PARASITIC BRONCHITIS IN ADULT CATTLE CAUSED BY IMMATURE LUNGWORMS

E. L. TAYLOR, M.V.Sc. (Liv.), M.R.C.V.S., D.V.H.
Veterinary Laboratory,
Ministry of Agriculture and Fisheries

A letter from Professor McCunn, appearing in *The Veterinary Record* for August 10th, has prompted the publication of the following note, which was written some three years ago after the investigation of an outbreak of acute parasitic bronchitis in adult cattle. Through the kindness of Professor McCunn and of Mr. A. C. Dixon I have also recently been able to visit a similar outbreak, where further enquiry into this very interesting condition was made. A note on these later observations is included. The causes underlying the occurrence of acute parasitic bronchitis in adult cattle constitute a very interesting problem in the epidemiology of helminthic disease and any opportunity of making further enquiry into the factors which lead up to a sudden invasion of stock with large numbers of lungworms would be greatly appreciated by the writer.

Professor McCunn's experience, as referred to in his letter, suggests that this acute and fatal form of husk is by no means a rare occurrence although very little information has found its way into the literature on helminthology, and the only record which I have been able to trace appeared in *The Journal of Comparative Pathology* for 1903, where Western published a short account of an outbreak of acute disease in a small herd of six cows. He records that a few days before his visit the animals developed symptoms of severe illness, showing a frequent husky cough and rapid respiration, the appetite was diminished or suppressed, and the temperature, in the different animals, was observed to range from 102° to 105·3°F. Shortly afterwards one of the affected animals was killed as being unlikely to recover and another died within ten days of the first visit. The lung of one animal was sent for examination to Sir John M'Fadyean, who reported that the disease was undoubtedly husk.

The history of the outbreak given by Western is very brief, but interesting, and is so little suggestive of husk that, had the *post-mortem* examination been made by a less competent observer, the accuracy of the diagnosis might have been suspected. The history is as follows. Up to the time of the first appearance of symptoms, the cows had been at grass on one of four fields. During recent months these fields had been grazed by ten heifers and five calves as

well as by the six cows, but the calves and heifers appeared to be quite healthy and at no time exhibited any symptoms of husk. The cows and younger animals had not, however, been pastured in the same field at one and the same time. The author completes the misleading history by the observation that husk is hardly ever seen in the district where this outbreak occurred.

History of the First Outbreak which came under Personal Observation

The circumstances of the outbreak about to be described are even more remarkable than those of Western's outbreak and, as the data concerning both the history of the disease and the development of the parasitic worms are more complete, they appear to be worth recording.

Calves and milking cows were pastured together in the same field at the same time for some weeks before the outbreak, during the outbreak, and afterwards; all of the five milking cows were more or less severely affected and three died, but the calves remained healthy, and apart from comparatively slight coughing, which in the ordinary way would have called for no comment, showed no evidence of husk.

The early history of the outbreak, as gathered from the attending veterinary practitioner and the bailiff, is as follows:—

The herd consisted of five pedigree Jersey cows, pasturing in a small field which had been reserved for making hay in the previous year; five calves, four of which had been continuously pastured in the same field with the milking cows; 18 heifers kept in an adjoining pasture, and a bull kept in the buildings. Symptoms first appeared on June 27th in one of the milking cows, which exhibited distressed breathing and a husky cough; these symptoms became worse, the cow rapidly fell away in condition, refused food, and on July 5th, only eight days after the first appearance of symptoms, was killed as being beyond hope of recovery. At the *post-mortem* examination, the attending veterinary surgeon found large numbers of lungworms.

Similar symptoms appeared almost simultaneously in the other four milking cows. On June 30th, the milk yield of all dropped very considerably, feeding practically ceased, all rapidly fell away in condition and coughed frequently, breathing became distressed, the temperature of one animal was found on July 9th to be 105·6°F. (the attending veterinary surgeon observed, however, that for the most part temperatures had been normal or only slightly raised) and one animal aborted.

Samples of fæces were collected on July 9th, from two cows, two calves and two heifers, and subsequently examined by a flotation method, with the following results:—

Milking cow No. 1 ...	2 lungworm larvæ.
Milking cow No. 2 ...	Negative.
Calf No. 1	13 lungworm larvæ.
Calf No. 2	Negative.
Heifer No. 1	1 lungworm larva.
Heifer No. 2	Negative.

None of these findings is in any way suggestive of husk, the numbers of larvæ being much too small.

A second cow (the one referred to as Milking cow No. 2 in the above list), became so ill that on August 5th it was killed, as being past hope of recovery—this, as will be seen, occurred between five and six weeks after the onset of symptoms. At *post-mortem* examination the bronchioles were found to be choked with very large numbers of lungworms and a microscopical examination of the contents of the large bowel showed that they contained no less than 2,300 lungworm larvæ per gramme.

On August 18th the premises were again visited and samples of fæces collected from the three remaining cows, from all of the calves, several of the heifers and the bull, and counts subsequently made of the numbers of larvæ, in the hope of gaining some information as to the distribution of infection and of finding some clue to its origin. The results of the examination showed that, with two exceptions only, the fæces of all these animals contained less than one dictyocaulus larva per gramme. One of the exceptions was a Jersey heifer, which showed 45 larvæ per gramme in the fæces, and the other, a milking cow which showed 120 larvæ per gramme of fæces. This cow was in a very weak and emaciated state when the material was collected, and died some days later, when a heavy infestation of lungworms was found at the *post-mortem* examination carried out by the attending veterinary practitioner. The two remaining cows made a complete recovery.

One of the cows, mentioned above as Cow No. 2, had been introduced to the herd as recently as June 14th, and on that account its history is of particular interest, showing, as it does, the extraordinary rapidity with which heavy infection was acquired, and the very acute course of the disease. The particulars of this cow's history in so far as they concern the disease are set down in chronological order below, the earlier particulars having been copied from the bailiff's herd book.

June 1st.—Calved.

June 14th.—Purchased, and brought on to the premises where it was housed in the buildings.

June 20th.—Turned out to pasture for the first time.

June 30th.—Began to show symptoms of disease.

July 5th.—Symptoms abated a little.

July 8th.—Seen by the author. Showed symptoms of severe respiratory disease. Had ceased feeding. Temperature 105·6°F. Was taken into the buildings.

July 9th.—Sample of fæces collected from the rectum, and at subsequent examination found to be free from lungworm larvæ.

July 11th-August 5th.—Condition became worse.

August 5th.—Killed and a *post-mortem* examination made, with the findings already referred to, *i.e.*, heavy infestation with adult dictyocaulus in the lung, 2,300 larvæ per gramme of intestinal contents.

Discussion of the First Outbreak

At first sight the results of the fæcal examination appear to be inconsistent: twelve days and 52 days after the appearance of symptoms no larvæ could be recovered from the fæces (with the exception of one cow positive at the 52nd day), and yet three cows died, on the 8th day, the 39th day, and some time after the 52nd day, heavy infestations of dictyocaulus being observed at *post-mortem* examination in each instance.

In his work on the life history of *Dictyocaulus viviparus*, Daubney found the period which elapses between infection, and the first appearance of eggs in the fæces to be six weeks. As no eggs were found in the first examination of the cow's fæces, it must be supposed that the date at which infection had been acquired was less than six weeks previous to the date of examination. This supposition is borne out by the history of Cow No. 2 (the newly-purchased cow), which had only been grazing in the infected pasture for ten days when symptoms first appeared. At this time the fæcal examination gave a negative result, but 33 days later, *i.e.*, six weeks and three days after this cow had been turned into the infected pasture, large numbers of larvæ were found in its intestinal contents.

The symptoms, and the results of fæcal examination, in the other cows are similar to those observed in Cow No. 2 (the newly-purchased cow), and there appears to be little doubt that infection was acquired in the field shortly after this cow had first been turned out there.

For the explanation of the negative findings in the fæcal examinations at the 52nd day, it is necessary to turn to what is known of the development of immunity towards helminthic infestations. Of the two cows which gave a negative test on this day, one had suffered particularly severely from the disease; it had been reduced to a very poor condition and still exhibited the husky cough at the time the material was collected. There can be no doubt that this animal had acquired a heavy lungworm infestation, but in the absence of continued reinfection had been able to overcome it and had thrown off the worms before the second examination was made. The cow which showed 120 larvæ per gramme of fæces and which afterwards died had presumably been too severely affected to throw off the worms.

The most extraordinary circumstances of the outbreak are, however, still to be accounted for. If the cows had been grazing that same field throughout the summer, why did they not previously contract infection? And why did the calves in the same field escape?

Examination of the pasture and further enquiry into the movements of the cows revealed circumstances which afford a not-improbable explanation for the unusual history.

An unguarded heap of cow manure stood in the pasture near to the farmyard gate, and was not fenced off from the field or protected from the cattle in any way. It was surrounded by a rank growth of coarse grasses, and the growth of grass within a radius of several yards of the gate was also noticed to be taller and coarser than that in the remainder of the field. Enquiry revealed that this part had been trampled into a quagmire during the winter and spring months. During that period the cattle spent the daytime in the pasture and were brought into the buildings at night, where they received concentrated food, and on this account they were in the habit of standing near to the farmyard gate for an hour or more towards the end of each day. There would, therefore, be a concentration of fæces at this part and the continued trampling of the wet soil would result in the preparation of a good medium for the development of the larvæ, all leading to the concentration of a large number of infective larvæ in the small area around the gate.

The rank, coarse grass which grows round manure heaps, and such as was seen to be growing in this area, is distasteful to grazing animals and in the usual way is left untouched, as it appears to have been left in this instance until a few days before the symptoms appeared in the cattle. It has already been noted that the newly-purchased cow had recently calved and for the first six days after being brought on to the premises was kept in the buildings along with the calf. On the seventh day it was turned into the pasture with the other cows and the older calves, but its own young calf was left in the buildings, and it was learned from the bailiff that for several days, because of the proximity of its calf, this cow could not be driven away from the yard gate, and that the other milking cows remained there also; not so

the calves, however, which kept to themselves in another part of the field. It seems very probable that during those few days, because the calling of the calf attracted the cows to that part of the field, all grazed the rank grass near the farmyard gate and round the unfenced dung heap (for the first time) and there picked up the heavy infection of which three of the five died: but, not being attracted in the same way, the calves continued to graze the other parts of the field and so escaped.

It was hoped to be able to confirm this, or to turn the probability into a virtual certainty by demonstrating numerous larvæ in this herbage. Grass was therefore collected from round the manure heap with this object in view on October 14th, but it must be recorded that on examination by means of the Baermann apparatus lungworm larvæ were not found. During the three-and-a-half months which intervened between the date of infestation of the cattle and the date of collection of the herbage, however, migration of the larvæ may have resulted in a great lessening of their concentration and so account for the negative results.

Note on Second Outbreak which came under Personal Observation

This outbreak occurred in a herd of 25 milking cows which had been grazed on one and the same twelve-and-a-half acres of pasture for the previous twelve months. Symptoms of disease first appeared about July 1st, when some of the cows began to cough frequently, and in some instances temperatures rose to 106°F. Three cows had died as a result of the infection before the time that I was privileged to see them, and three others were badly affected at that time, *i.e.*, on July 25th. Most of the other cows appeared to have escaped; one or two of them had been observed to cough a little, but there were no definite symptoms of disease.

It is a curious feature of this outbreak that during the whole of the 15 years in which this farm had been managed by the present farmer, under the same general system of management, there had not at any time been trouble with husk. This part of the history corresponds with the report of Western's outbreak, in which husk is recorded as being of comparatively rare occurrence in the district where his observation was made.

A second curious feature of the present outbreak is its sudden onset, severe symptoms appearing almost simultaneously in six members of the herd; a part of the history agreeing with that of the first outbreak here recorded. And a third curious feature, common to Western's outbreak as well as to the first one here recorded, is that calves and yearlings were unaffected. In this instance they were not grazing along with the milking cows but were in an adjoining field to which some of the milking cows had access for a few hours only.

Suggested Explanation of the Second Outbreak

Enquiry into the circumstances which might have led up to this outbreak revealed that the owner of the cattle had carried out some extensive alterations to the cowsheds just before the trouble occurred, necessitating temporary changes in the housing of the cattle during milking. While waiting to be milked, or before being placed in their own proper pasture, some of the cows were turned into a small paddock in which the calves were kept. This paddock was very bare and contained an unfenced heap of old and thoroughly rotted cow manure.

The following alternative suggestions are made for the explanation of this outbreak:—

(1) That, being used to foul pastures (25 cows on twelve-and-a-half acres for twelve months), the dairy cows grazed herbage, which the calves would not touch, immediately round the manure heap in the small paddock.

(2) That infestation of the ground in the cow pastures became very heavy as a result of overstocking and that some combination of high temperature and heavy dew at night resulted in a mass migration of the larvæ and a sudden acquisition of heavy infestation by the cows.

The first conjecture appears to offer the more likely explanation, as it is difficult to understand how a heavy infection could be built up on the cow pasture in the absence of young and susceptible carriers of worms, and the second conjecture necessitates the "mass-migration" hypothesis at a certain definite time. This appears to be unlikely, and as the time at which access of the cows was permitted to the manure heap coincides with the time at which infestation occurred, it seems not unlikely that that may be the correct explanation.

Conclusions

(1) Massive infestation with the infective larvæ of *Dictyocaulus viviparus*, such as may at times occur under natural conditions, can speedily break down the relatively strong immunity of adult cattle. Mature cattle are liable to suffer from a very acute and fatal form of husk, so severe as to bring them to the point of death within eleven days of infection.

(2) Severe disease and death can be caused by immature lungworms in adult cattle.

(3) In the absence of reinfection, the lungworms carried by infected mature cattle are speedily eliminated.

(4) The distribution of infective lungworm larvæ in a pasture may be very uneven.

(5) It is also strongly suggested that an unprotected heap of cow manure may be a source of great danger in this disease.

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NATIONAL PONY SOCIETY

Mr. F. H. Unwin, presiding at a recently-held Council meeting of the National Pony Society, stated that the next Pony Show would be held at the Royal Agricultural Hall, London, on Friday and Saturday, March 20th and 21st, 1936. The schedule of classes to be offered was drawn up, including 12 young stock and breeding classes for polo ponies, seven classes for ridden ponies, one hack class for ladies (side saddle), two Welsh classes, six Shetland classes, two classes for Mountain and Moorland ponies, five classes for children's ponies and nine competition and jumping classes.

The equitation tests for children had also been amended, said the President, and ponies in these tests would no longer be required to be also exhibited in the Children's Riding classes. The wording of the class for polo-bred hacks had been altered and would read "hacks (polo-bred) four-years-old and up to eight-years-old, to be ridden by a lady side saddle." The Chairman added that arrangements were being made for a polo pony ride by The Queen Bays on the lines of the previous very successful rides.

Considerable discussion took place as to the encouragement of Mountain and Moorland ponies, and the Council took pleasure in announcing that the War Office had again renewed their offer of premiums for certain of the breeds, similar to the awards this year. The Society agreed to renew the sum of £10 to each native Breed Society for the encouragement of the following ponies: Dales, Dartmoor, Exmoor, Fell, Highland and New Forest.

The Council were glad to learn that the Royal Agricultural Society of England had agreed to their request that the owners of two-year-old colts exhibited at their show should certify on their entry form that the colt is not being travelled for service in 1936 or exhibited with a view to its use for service. They fully appreciated the generous range of classes to be offered at the Royal Show at Bristol, and hoped that all breeders would support this show.

It was reported that to date 17 colts and 22 fillies had been tendered for entry in the 1936 Supplement of young polo ponies, and that 25 entries had been received this year for the Young Stock Register. The Secretary was prepared to accept entries up to the end of the month, and the Council hoped that all breeders would enter their young polo ponies.

It was further reported that during the past show season the Society had awarded six Gold Medals, 18 Silver Medals, nine Bronze Medals and £38 in prize money for polo pony classes, and eight Silver Medals and £8 for Mountain and Moorland ponies, this latter sum being in addition to the £60 awarded to the different Societies for encouragement of their native breed of ponies at local shows, etc.

Abstracts

[Some Observations on Milk-borne Infection. BROOKS, P. B. (1935.) *J. Amer. Vet. Med. Ass.* **86.** 3. 342-347.]

In 1934, 255 cases of undulant fever were reported in the State of New York, eight being from New York City with more than a half of the population and 247 from the rest of the State. Nearly all of these infections were believed to be due to the consumption of raw milk, other sources of infection having been ruled out with reasonable certainty. The difference between the incidence in New York City and in the rest of the State is believed to be due to the fact that in New York City all milk except a very small amount of "Certified" milk is pasteurised, whilst in the rest of the State only about 50 per cent. is so treated. Nearly all of the brucella strains examined were of the bovine type. The proportion of pasteurised milk is increasing and after January 1st (presumably 1936) no raw milk other than "Certified" or "Special A Raw," a new grade from herds free from mastitis and abortion organisms, will be permitted in the State. In 1933 the Public Health Service reports recorded 1,659 cases of undulant fever as having been reported in the United States. This figure is believed to represent only a fraction of the total cases. In support of this it is shown that in New York State 21 cases were reported in 1927 and 255 in 1933, and that other states which consider the condition seriously have shown a similarly increasing figure. Yet other states in which a somewhat similar incidence would be expected have reported none.

A similar disproportion exists in the reports of milk-borne outbreaks of septic sore throat (due to hæmolytic streptococci). Whilst ten states reported a total of 27 outbreaks due to this cause, 38 states reported none. In all states except two, however, the existence of the disease was shown by the fact that deaths from septic sore throat were recorded, whilst many showed a large number, particularly in certain years. One state, *viz.*, Michigan, reported 255 deaths in 1927, 274 in 1929 and none in the succeeding years. It has been the author's experience that each death in a septic sore throat outbreak means about 25 cases and it is thought unlikely that such wide variations as that in Michigan and several of the states would occur in the absence of epidemics. The fact is emphasised that even in New York, where a sharp look-out is kept for outbreaks, two recent extensive outbreaks only came to light accidentally.

Nearly all of the outbreaks were traced to cows with mastitis and occasionally the human carrier responsible for the infection of the cow

was also found. In one case the infection came from the proprietor of the dairy, who had a wound on his forearm which was discharging hæmolytic streptococci. The source of another outbreak involving about 600 cases was not found until some time afterwards when the proprietor of the herd was shown a chart showing that on a certain date the epidemic subsided abruptly. He then remembered that at about that time he dried off and turned out a cow with an injured udder. This was found to be excreting hæmolytic streptococci of human type corresponding to those in the human cases, and to those found in the throat of the dairyman.

The author is emphatic that any outbreak of septic sore throat which extends over several days is due to an infected cow which has been infected from a human carrier.

A. W. S.

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[The Present Status of Milk Control in the United States. Frank, L. C. (1935.) *J. Amer. Vet. Med. Ass.* **86.** 3. 347-353.]

Dealing with the history of milk-borne disease in the United States of America, Frank recalls that in 1927 Armstrong and Parran listed 791 outbreaks of milk-borne disease as having been reported in the literature from 1881 to 1927. Since 1924 the Public Health Service has recorded annual statistics of all outbreaks. The total number has shown no diminution from 1924 to 1933 and has varied from 33 to 68 per year, typhoid heading the list with 21 to 49 outbreaks, septic sore throat and scarlet fever following, each with an average of five per year, whilst occasional epidemics of milk-borne diphtheria, paratyphoid A or B infection, and infections due to miscellaneous causes have been reported.

Milk-borne tuberculosis, as judged from the returns for deaths from "tuberculosis other than respiratory," has shown a marked drop from 1917 onwards. From 1900 to 1916 the annual death rate from this cause was about 23 per 100,000 population. From 1917 onwards it dropped gradually to 6·5 per 100,000 in 1932, a result believed in large measure to be due to the elimination of tuberculous cattle, though the increased use of pasteurisation is a contributory factor.

Dealing with the progress of tuberculosis eradication, it is stated that in 1917 20,000 cattle were tested, whilst in 1933 the number was about 13,000,000. The average percentage of cattle found to be tuberculous has dropped from 4·0 in 1922 to 1·4 in 1932. The proportion of milk from tuberculin-tested cows sold in American cities with a population of 10,000 or more rose from 68·1 per cent. in 1927 to 88·7 per cent. and it is anticipated that in the next five or ten years it will reach 95 per cent.

Turning next to pasteurisation, it is stated that, whilst in 1927 the proportion of pasteurised milk in cities of 10,000 or over was 81·8 per cent. of the whole, in 1931 it was 87·5 per cent. and is increasing rapidly. In 1931, however, many of the smaller cities still had a large proportion of raw milk.

Until 1923 little progress had been made in securing the adoption of uniform milk legislation in the United States. In that year the United States Public Health Service framed plans for adoption by the various states, of which the main principles are summarised: (*a*) all milk legislation should define a grade of milk which combines the maximum of safety and flavour with minimum cost, *e.g.*, Grade A Pasteurised; (*b*) since compulsory pasteurisation is at present impracticable a grade of raw milk must also be defined. In practice, two grades are usually provided—Certified and Grade A. When violation of the prescribed order is discovered the law can be enforced either by revoking the licence or, when the grades other than those mentioned exist, by requiring the milk to be labelled with a lower grade label. The latter procedure is effective and easier to enforce than revocation of the licence. The necessity for frequent inspection of dairy farms and milk plant is emphasised. Comparative ratings of the milk control work of all municipalities are made and semi-annual lists of those which receive ratings of 90 per cent. or more published. The object of this device is to furnish a yard-stick by which the work of the various municipalities may be compared. About 600 municipalities have already adopted the central recommendations. It is believed that the growth of uniform and effective milk Orders will result in the elimination of milk-borne disease within the next generation.

A. W. S.

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[Family Tuberculosis due to Bovine Tubercle Bacilli. Griffith, A. S., and Munro, W. T. (1935.) *Brit. Med. J.* July 27th. 147-150.]

The histories of two families are recorded, in each of which several members suffered from tuberculosis, the infecting organism being a bovine type. The various possible methods of infection are discussed. In the one family infection probably occurred in each afflicted individual as a result of drinking milk. In the other family evidence suggests that the bovine strain of infection was transmitted from a man to his wife by contact.

E. J. P.

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[Bovine Tubercle Bacilli in Renal Tuberculosis. Alston, J. M., and Griffith, A. S. (1935.) *Edinburgh Med. J.* March. p. 175.]

The authors isolated tubercle bacilli from 42 cases of renal tuberculosis. In seven of these

cases the genital tract was also involved. The centrifuged urine was generally inoculated into guinea-pigs, though some of the strains were isolated by direct culture. Nineteen of the samples were injected into two guinea-pigs. In ten experiments both animals became tuberculous, while in the remaining nine only one animal, when killed four or six weeks later, showed evidence of infection. This experience emphasises the importance of inoculating more than one animal when the number of bacilli in pathological material is suspected to be small. The tubercle bacilli isolated from the 42 cases were all studied culturally, while the dysgonic strains were injected into rabbits as well. It was found that 30·9 per cent. of the patients were infected with tubercle bacilli of bovine type. This proportion of bovine infections is remarkably high, and approximates to that found in the middle east of Scotland by Munro and Griffith in tuberculous meningitis and bone and joint tuberculosis.

S. J. E.

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[I.—The Interpretation of Reticulocyte Reactions. Minot, G. R., and Castle, W. B. (1935.) *Lancet.* **229.** 319-330.

II.—An Index of Blood Regeneration. *Ibid.* **229.** 312.]

I and II. It has become clear that the few reticulocytes found in the peripheral circulation of normal adults are a stage in the development of the red cell intermediate between the nucleated and the fully adult type. It has also become evident that a study of the fluctuations in the numbers of these cells gives an exact indication of the activity of the bone marrow and may be used to ascertain the effectiveness of certain therapeutic agents used in the treatment of anæmia. It must be remembered, however, that a reticulocyte response after the administration of some drug may not indicate an orderly physiological activity, for such a response may be induced by the presence of abnormal cells which act as irritants to the bone marrow, as in the progressive anæmia of metastatic carcinoma or miliary tuberculosis. In cases of pernicious anæmia, the administration of liver extract is followed in from two to ten days by an orderly physiological reticulocyte response which reaches a maximum and then declines to its original value. With continued therapy, the red blood cells increase as a result of the formation of mature erythrocytes.

A reticulocyte count may also be of value for the diagnosis or prognosis of unsuspected internal hæmorrhage, because, after a severe hæmorrhage, the height to which the reticulocytes will rise in the peripheral circulation depends on the amount of blood lost. In conclusion, a study of reticulocyte responses in patients suffering from pernicious anæmia has proved itself to be of value in estimating the potency of different commercial preparations of liver extract and it is suggested that in future the potency of all such preparations should be assessed by this means.

J. A .N.

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[Pathological Anatomy and Histology of the Pineal Body. Lászlo, F. (1934.) **42.** 43. 685-689.]

[The functions of the pineal gland can be said to be unknown, although it has been suggested that the gland produces a hormone associated with skeletal and sexual development. These observations have mainly been made from the symptoms produced by the comparatively rare pineal tumours in the human being. Many of these cases occur in young boys who exhibit signs of precocious puberty, along with intracranial hypertension. However, even with these facts the exact nature and function of this gland, which was once thought to be the seat of the soul, remains very much of a mystery. It follows from this that there is also a paucity of information regarding the pathology.]

This article concerns an examination of the gland from 151 horses of all ages and the findings are of great interest, although at present of little real significance. The anatomy and histology are described and need no mention, although the gland is said to measure on an average 11 × 6 mm. and to weigh 0·16 g. The various types of lesions observed were as follows: cysts (one case) lined by ependyma which had probably arisen from the pineal recess of the lateral ventricle [in the human during development ependymal canals occur which later disappear]; hyperæmia (seven cases); hæmorrhages with hæmosiderin deposition (13 cases); perivasculitis (eight cases); fibrosis and hyalinisation, often with calcareous deposits in hyalinised areas (six cases). No structural differences were observed between the glands from horses of different ages; in other words, an involution process does not occur.

J. R. M. I.

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[New Experimental Results on the Pathogenesis of Cataract. Monjukowa, N. K., and Fradkin, M. J. (1935.) *Arch. Opthalmol.* **133.** 328-338; 378-382.]

Since the discovery that vitamin C is hexuronic acid or ascorbic acid (Szent-Gyorgyi), chemical tests have shown that the vitamin is present in certain tissues of the body in high concentration. Normally, in addition to the liver and suprarenal gland, the anterior chamber of

the eye, which undoubtedly plays a part in the metabolism of the lens, contains a very high concentration of the vitamin, which might be explained by the permeability of the eye to ascorbic acid. In guinea-pigs coincident with the onset of scurvy the vitamin C rapidly disappears from the tissues. The authors consider that the disappearance of the vitamin from the anterior chamber is an ætiological factor in the occurrence of lens opacity and accordingly senile cataract is thus a disturbance of the permeability of the eye, owing to a general lack of vitamin C. Acting on this assumption and that in cases of cataract there must be an avitaminosis of the whole body, the authors treated patients with incipient and immature cataract by means of a diet containing abundant vitamin C and, in addition, the vitamin was applied locally in the form of drops. No definite results could be obtained. J. R. M. I.

McGILL UNIVERSITY'S TRIBUTE TO DR. GRIFFITH EVANS

Among the innumerable messages of congratulation received by Dr. Griffith Evans, the great Welsh veterinary scientist, of Bangor, on the occasion of the celebration of his hundredth birthday, was one from his old University—McGill, Montreal, Canada—that gave him peculiar pleasure. The message read: "The Medical Faculty of McGill University send anniversary greetings, and take pride in your achievements. —(Sd.) Dean Martin."

In a British United Press message, received by mail from Montreal on Friday of last week, reference is made to the University's greetings. The report adds: "At a recent meeting of the University Senate, presided over by the Principal, Mr. A. E. Morgan, former head of Hull University College, a resolution was adopted recognising 'with very special pride' the achievements of Dr. Evans, 'which have had such a fundamental bearing on the diagnosis and treatment of many diseases, and which have been of such inestimable benefit to mankind.'"

Dr. Evans, who is believed to be McGill's oldest living graduate, graduated there in 1864, after writing a thesis on tuberculosis, in which he advocated open-air treatment.

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FOOD POISONING

Nature draws attention to a memorandum recently issued by the Ministry of Health on the steps to be taken by medical officers of health (outside London) in suspected cases of food poisoning (Memo. 188/Med.). The two classes of food poisoning are dealt with—contamination of food by poisonous chemicals and bacterial infections of food, which are far more frequent. Directions are given outlining the methods of investigating outbreaks, the collection of material for chemical or bacteriological examination, and method of packing and transmission to the Ministry, with hints on the chemical or bacteriological examination. In an appendix, a scheme is outlined for the routine inquiry into outbreaks of poisoning by meat foods, and in a second appendix valuable details are given for the isolation and identification of the bacteria (*Salmonella*) concerned in bacterial food poisoning.

NATIONAL VETERINARY MEDICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND

Quarterly Meeting of Council

There was a very full attendance of members at the quarterly meeting of Council, N.V.M.A., held at the Connaught Rooms, Great Queen Street, W.C., on the afternoon of Tuesday, October 1st, 1935.

The President (Captain J. R. Barker) occupied the chair and there were also present: Messrs. L. S. Balls, H. Bell, H. W. Steele Bodger and H. E. Bywater, Captain J. C. Coleman, Major T. Dalling, Mr. D. G. Davies, Major Brennan DeVine, Messrs. J. B. Dier and H. M. Duff, Major G. W. Dunkin, Messrs. E. P. Edwards and H. W. Griffiths, Captain O. V. Gunning, Messrs. J. Holroyd and H. Tudor Hughes, Howel V. Hughes, Major H. Kirk, Messrs. G. H. Locke and J. W. McIntosh, Professor J. Macqueen, Messrs. G. P. Male, J. W. Hall Masheter and T. J. Margarson, Professor W. M. Mitchell, Major-General Sir John Moore, Mr. R. Barons Nelder, Major R. H. H. Over, Major D. S. Rabagliati, Captain J. R. Rider (Hon. Secretary), Dr. J. T. Share-Jones, Lieut.-Colonel P. J. Simpson, Messrs. Arnold Spicer and H. P. Standley, Dr. A. W. Whitehouse, Messrs. T. Wilkinson, R. A. Willett and T. Wilson, Professor G. H. Wooldridge, Dr. W. R. Wooldridge and Captain W. G. Wragg (Hon. Treasurer), together with Mr. C. O. Langley (Solicitor) and Mr. F. Knight (Secretary).

The minutes of the meetings of Council held at Belfast, having been published in *The Veterinary Record*, were taken as read and were confirmed, on the proposition of Mr. Steele Bodger, seconded by Major Rabagliati, and signed by the President as correct.

Arising out of them the Secretary said that the first matter concerned the resolution from the Society of Veterinary Practitioners on the subject of free tuberculin testing of herds, which the Council decided, on the recommendation of a joint meeting of the Parliamentary Committee and the Veterinary Officers' and Public Health Committee, to forward to the Royal College of Veterinary Surgeons. Evidence in support of that resolution, said the Secretary, had been furnished by the Society of Veterinary Practitioners, but the proposed communication to the Royal College of Veterinary Surgeons had not yet been sent in view of the receipt of a further resolution from the Society of Veterinary Practitioners, as follows:—

> "That this general meeting of the Society of Veterinary Practitioners is of the opinion that the future provision of veterinary surgeons engaged in private

practice, in numbers adequate to serve the needs of agriculturists, is being seriously menaced, and the professional and economic position of those now so engaged is being rapidly made untenable by the uneconomic and unnecessary competition of the veterinary officers of local authorities.

"The Society is of the opinion that these forms of competition cannot be justified as being necessary in the public interest. By such measures as the free or semi-free testing of cattle, and the provision of a free or uneconomic service in connection with the Accredited Herds Scheme, financed out of the public rates, practitioners are being deprived of their means of livelihood and their professional activities are being arbitrarily curtailed.

"Moreover, there is evidence of these services being publicly advertised, of unjustifiable interpretations of the various Acts and Orders, and of arbitrary interference with the free choice by agriculturists of their veterinary advisers.

"This meeting is of the opinion that these several matters urgently call for consideration, and respectfully requests the National Veterinary Medical Association to appoint a special committee to consider them in all their aspects."

It was desired to know whether the Council still wished the first resolution to be forwarded to the R.C.V.S.

The President said that the Council had heard read that resolution and the Secretary's remarks upon it: what were their wishes in the matter?

Mr. Steele Bodger observed that, if he might be permitted to speak to that resolution, he desired to say that he had sent out a questionnaire to the 300 members of his Society (the Society of Veterinary Practitioners) and he was overwhelmed with replies to that questionnaire: the replies, however, showed that not only was it the question of free or partly free tuberculin testing that was involved, but the matter went much deeper, and there was much, in the opinion of the Society, which called for investigation by the Council of the N.V.M.A. and also by the Council of the Royal College of Veterinary Surgeons; in fact, they suggested that there should be an investigation of the whole question of free service. His Society were convinced from the evidence at their disposal that there was in fact one code of ethics which obtained for one section of the profession and another code of ethics which obtained for another section of the profession; also that practitioners were exposed and subjected to unfair and uneconomic competition by sheltered sections of the profession, and it had become evident that if that sort of thing was allowed to continue there would be disruption within the profession, and a large number of practising members of the profession would be forced out of practice and their livelihood would be taken away from them. They would therefore respectfully urge that a special committee, such as was appointed to investigate the Veterinary Advisory Scheme, should be set up to deal with the question of free service and that a questionnaire should go forth from the "National" to all members of the profession, calling for evidence which should be reviewed impartially. He would ask that the special committee should be appointed with power to act, or alternatively, if it were deemed necessary, that a special meeting of Council should be called to consider the result of that investigation and, further, that if necessary, a special meeting of Council, R.C.V.S., should be called to consider the ethical aspect of the question.

Major Kirk supported the formation of the special committee as suggested by Mr. Steele Bodger.

The following resolution, "That a committee be set up with power to go into this matter," was then put and carried unanimously.

Concerning the terms of reference of the committee, it was moved by Dr. Share-Jones and seconded by Captain Coleman: "That the committee be appointed to discuss the question of free service."

The President enquired if it was the wish of the Council that the committee should be given power to act.

Dr. Whitehouse asked what sort of action would be contemplated.

Major Rabagliati said that he had no objection to the formation of that committee, but he did think that it should put its evidence before the Council before any action was taken.

Dr. Share-Jones observed that he took it that, on its completion of the report, the committee, if they thought the matter was really urgent, could request the President to summon a special meeting of Council.

The President: "That is correct."

Dr. Share-Jones, continuing, said that if that were the case there was no objection to the matter being referred back to the Council.

The President: "Then, if it is your wish, the special committee will report back to the next meeting of Council—a special meeting if necessary."

The Council expressed assent.

The President asked for the names of members to serve on the special committee.

Mr. Steele Bodger enquired whether the personnel of the committee must be limited to members who were not members of the Council, R.C.V.S., and proceeded to say that he would like a definite ruling whether or not members

of the Council, R.C.V.S., were entitled to serve on that committee and, if not, why not.

Mr. McIntosh said that, in reply to Mr. Steele Bodger's remarks, he thought it was advisable that no member of the Council, R.C.V.S., should be on that committee because, in view of the fact that he understood that a resolution to that effect would be coming before the Council, R.C.V S., he thought it would be wise that no member of the Council of that body should be involved in the N.V.M.A. enquiry. He thought that members of the Council, R.C.V.S., there present would agree with him in that expression of opinion. The subject before them was a very important one, and the members of Council, R.C.V.S., should be in a position to exercise their judgment on the matter without being tied to a committee in any way.

Mr. Steele Bodger replied that he accepted that and added that he would be glad to be assured that no member of the Society of Veterinary Practitioners who was also a member of Council would be debarred from voting upon the recommendations of the special committee when these were considered by the Council.

The President said he thought Mr McIntosh would be well aware that such a restriction of the personnel of the committee as he proposed would deprive the Association of the services in this connection of some very valuable members who might bring forward some very useful information.

Mr. McIntosh said that he did not wish to restrict such members if they so desired, but he was simply putting the matter as he saw it.

Dr. Whitehouse pointed out that members of the Royal College Council were members of the Registration Committee, and if any question came up before that committee in its investigation which had a bearing on ethics, then those of them who were members of Council, R.C.V.S., would be debarred from taking part.

Dr. Share-Jones observed that he took it that the position of a member of Council, R.C.V.S., would only be prejudiced in the case of what he might term the "trial" of an individual member. But he did not think anyone should be actually debarred from the general discussion of a principle so long as it had no reference to the conduct of any specific individual.

The President said they had had some previous experience to go upon in this connection, namely, in the constitution of the committee to deal with the Veterinary Investigation Officers question, when, so far as possible, they avoided appointing members of Council, R.C.V.S, and if it was their wish they could follow that precedent.

Dr. Wooldridge commented that members of Council, R.C.V.S., could attend the deliberations of the committee in what he might call an "observer" capacity, even although they would not actually take part in framing the final decisions of the committee.

Dr. Share-Jones said that if that committee decided to refer that matter for discussion to the Council of the R.C.V.S., he agreed that no members of the latter Council should have his hands tied by membership of the Association's committee, but the committee had not decided that yet.

Mr. Edwards observed that with regard to the constitution of the committee of enquiry into the Veterinary Advisory Scheme he understood at the time that the only reason put forward why a member of the Royal College Council should not sit on that committee was that the Council were assured that if the case of an Advisory Officer were brought before the Council of the Royal College sitting as a Registration Committee, the Association would be the prosecutor—they were informed later that that was not possible, and in the end cases that were brought were brought by individual members; therefore he saw no reason why a member of the Council, R.C.V S., should not at least sit to hear and consider the evidence brought.

The President now enquired how many names the Council desired to submit for membership of that special committee—a committee of seven, twelve, or fifteen?

Mr. Hall Masheter thought the committee should consist of nine members.

Mr. Hall Masheter's proposition was not seconded; consequently the President called for names.

The special committee was constituted as follows: Captain Donald Campbell, Major T. Dalling, Major B. DeVine, Mr. J. B. Dier, Mr. Arthur Gofton, Captain O. V. Gunning, Professor W. M. Mitchell, Captain J. O. Powley, Mr. H. W. Steele Bodger, Mr. T. Wilkinson, Mr. T. Wilson and Dr. W. R. Wooldridge.

Also arising from the minutes, the Secretary read a letter from Mr. P. J. Howard, of Ennis, requesting the Secretary to convey to the Council his appreciation of their letter of thanks to him for his services in connection with the N.V.M.A. Congress at Belfast. It was, said Mr. Howard, a great pleasure to him to help the Provisional Committee, and he thought the Congress was a great success.

A letter was read from Major J. Gillray McGregor, regretting his inability to accept the office of Vice-President, to which he had been elected at Belfast subject to his consent.

In his communication, Major McGregor said that, while he appreciated very highly the honour of his election, for some years he had endeavoured to secure that the Vice-President

who represented Scotland should be the President of the Scottish Branch. This was the reason why he declined the honour at the Edinburgh meeting the previous year, and his views had not changed. He must decline the honour, but he would be glad if the Council would accept his thanks and appreciation of their action in recommending him for the position.

The President said that he understood that Captain A. Young, of Dumfries, occupied the position of President of the Scottish Branch—the post which Major McGregor occupied while he was Vice-President of the Association. Would someone propose Captain Young's name or that of someone else to fill the vacancy?

On the proposition of Professor Mitchell, seconded by Dr. Whitehouse, Captain A. Young was unanimously elected as Vice-President of the Association representing Scotland.

Further arising, a letter was read from Captain J. R. Rider asking the Secretary to convey to the Council his thanks for their expression of continued confidence shown by his re-election to the office of Hon. Secretary for another year.

The following letter from Dr. Griffith Evans, of Bangor, dated August 7th, 1935, was received with loud applause from the Council:—

Brynkynallt,
Bangor.
August 7th, 1935.

The Secretary,
National Veterinary Medical Association,
2, Verulam Buildings,
Gray's Inn,
London, W.C.1.

Dear Sir,

Will you please accept for yourself and convey to the authorities of your Association my most grateful thanks for the very kind message of congratulation you sent me on the occasion of my attaining my hundredth birthday?

Yours sincerely,
Griffith Evans.

This concluded matters arising from the minutes of the last meeting, and the Secretary proceeded to read the following list of members of Council who had sent messages of apology for inability to attend the meeting: Professor G. F. Boddie, Dr. O. Charnock Bradley, Mr. J. W. Burgess, Professor J. B. Buxton, Captain Donald Campbell, Professor J. F. Craig, Mr. H. W. Dawes, Lieut.-Colonel J. A. Dixon, Major A. C. Duncan, Captain J. Fox, Mr. Arthur Gofton, Sir Frederick Hobday, Mr. H. G. Lamont, Mr. E. F. McCleery, Major J. G. McGregor, Captain S. J. Motton, Captain A. W. Noel Pillers, Mr. A. F. O'Dea, Captain E. Brayley Reynolds, Mr. H. L. Roberts, Mr. J. N. Ritchie, Mr. G. A. Sangster, Captain R. Simpson, Major A. Spreull, Major F. J. Taylor, Major J. H. Taylor, Captain W. K. Townson, Mr. W. Tweed, Mr. J. D. Whitty and Mr. Wm. Woods.

CORRESPONDENCE

The following letter from Professor Macqueen with reference to the Branches of the Association was brought forward from the Edinburgh meeting of Council:—

252, Camden Road,
N.W.1.
June 26th, 1935.

Dear Mr. Knight,

On p. 723 of *The Veterinary Record* of June 22nd, it is stated:—

". . . that Scotland now possesses the only functional and really active branch within the National Veterinary Medical Association." If that is correct, what has become of the other branches—Northern, Southern and Irish—of the N.V.M.A.? If they are still alive what hinders them from giving some sign of animation?

If at the forthcoming meeting of the Council of the N.V.M.A. you will submit this query to the President or to the Executive that is responsible for the conduct of the Association or of its branches, you will much oblige.

Yours faithfully,
J. Macqueen.

The Secretary,
N.V.M.A.,
Gray's Inn.

In accordance with instructions, proceeded the Secretary, a copy of Professor Macqueen's letter was sent to the Presidents of the Southern and Irish Branches and to the Secretary of the Northern Branch, for their comments.

The following replies had been received:—

From the President of the Irish Branch, dated September 18th, 1935, in the following terms:—

Dear Mr. Knight,

Thank you for your reminder of August 29th.

I think the explanation of the activity, or want of activity, of the branches of the National is quite simple. The Scottish branch is functioning because in Scotland there are many problems which are peculiar to the profession in that country as apart from England and which are exercising the minds of its members. These problems necessarily draw the divisions together for their discussion and solution. In Ireland the position is different. At the present time there are two divisions and in different political areas which have their own particular interests. I am hoping that as the result of the Congress in Belfast the two branches will have more intimate contact and that, in the future, meetings of the Branch will be arranged.

Yours sincerely,
J. F. Craig.

From the President of the Southern Branch, dated July 24th, 1935, addressed to the Secretary, as follows:—

Dear Sir,

In reply to your letter of the 19th instant, inviting my observations on Professor Macqueen's letter to the Council in reference to the functioning of the Southern, Northern and Irish

Branches of the N.V.M.A., I can only speak of the Southern Branch, and this one I must at once reluctantly admit has not functioned for some years, in spite of the keen desire of its Secretary, Mr. G. P. Male, that it should, and the efforts he has made to that end.

The question of the functioning of this Branch is not a fresh one; it has been asked by more than one President of the "National" during recent years, and I can only reiterate what has been said to them, *viz.*, that the efforts put forth by the Secretary, and in some small measure by myself, to instil some life into the Branch, have met with poor response. The Presidents and Secretaries of the Divisions incorporated in the Branch were once invited to a meeting in London, to be held prior to the Council Meeting, to consider the possibility of the Branch functioning, but the response here again was not encouraging. In private conversations on other occasions with the Officers of the Divisions, one felt that but little support would be forthcoming for a Branch meeting. I believe several of the Divisions considered the matter at their meetings, but hearing nothing further of it, I presumed it was not received with favour. I was present at one of the Divisional meetings when the question was raised, and after a very short discussion, it was decided without a single dissentient, that under present circumstances they could not promise to support a Branch meeting in any way. The two main reasons were as follows, and I presume these reasons would largely apply to the other Divisions:—

(1) The difficulty experienced by its members to attend their own Divisional meetings, as shown by the small average number of its members present at these meetings.

(2) That a Branch meeting made sufficiently attractive and interesting to induce members to attend, would detract from the attendance, not only at the Divisional meetings, but at the Annual Congress of the N.V.M.A.

One may deduce from what I have stated, that at least there appears an absence of that interest necessary for the holding of a successful Branch meeting.

Yours faithfully,

W. D. Rees.

From the Hon. Secretary of the Northern Branch, Captain A. W. Nöel Pillers, in similar terms.

The foregoing correspondence having been read, the President enquired of Professor Macqueen if he had any observations to make in the matter.

Professor Macqueen replied that he was quite satisfied. The only further thing he would ask was what the Hon. Secretary thought about the question, because, according to Clause 57 of the Articles of Association, the Hon. Secretary amongst his other duties was to co-ordinate that Council with Divisions and Branches and they might therefore know what Captain Rider thought about the position.

Captain Rider replied that he was much indebted to Professor Macqueen for putting him right on the Articles of Association; he confessed he had not read that particular one; none the less, his sentiments were in agreement with those that had been read. He thought that it was beating one's head against a wall to attempt to make those Branches function. The Scottish Branch functioned for reasons which had been given, but he felt very strongly that the others were not likely to function at all.

Professor Mitchell said that when the Scottish Branch first started, matters were in a lukewarm condition, but since then they had commenced holding regular meetings; these had been getting better and better, and he did think that even "in this backward country"—(laughter)—the Branches should be continued, especially as, from the evidence which had been provided even at that meeting, there were big issues to be decided in the consideration of which the Branches might and should play a useful part.

Dr. Share-Jones asked if it was advisable to continue Branches that did not wish to function. At the same time he was fully convinced that were such a wish in existence it was highly desirable that the Branches be continued. Moreover, he would point out that there was a proposal going forward for the establishment of a Branch in Wales, which he thought would be a very live Branch indeed. Perhaps the same reasons operated in Wales which were responsible for the success of the Scottish Branch, namely, that there were problems in the Principality which were peculiar to Wales, just as there were problems that were specific to Scotland, and he thought that it would be advantageous to Wales to have a Branch.

Mr. McIntosh expressed agreement with Professor Mitchell's views and said that if it were possible to have functioning Branches in the larger areas it would be highly desirable to continue them, for in such areas there were matters of great local importance which could best be discussed and decided by such a large local organisation as a Branch. For that reason, if it were possible to get the Branches roused into action in the manner so splendidly exemplified by the Scottish Branch, there was no reason why that should not be done. There was no possible objection to that course; in fact, it was highly desirable.

The President here intervened to say that he did not think the Council could take any action in that matter that afternoon, and the discussion terminated.

The Secretary said that the next item under the heading "Correspondence" was the consideration of letters from the National Horse Association of Great Britain *re* the threatened ban on horse-drawn traffic. These communications were read.

Sir John Moore said that he desired to make a few observations regarding the important subject dealt with in the correspondence, etc., which had been read to the Council.

The National Horse Association had a

Council meeting on September 23rd, when it was decided to form a small sub-committee to interview the Minister himself and to see if he could be persuaded by personal approach on this matter to give way to all those views concerning the opposition to his proposals which had been expressed in Parliament. He (Sir John) also wrote personally to the Minister, while he had asked Macdonald & Martin, Ltd., the publishers of *The Farmer and Stockbreeder* Year Book, to send the Minister a copy of that book, which contained an article by him on the subject. In addition, he had written to various newspapers, and *The Morning Post* had kindly accepted his letter on the subject. In that letter he had explained the whole position, and he thought perhaps a certain amount of good would come of its publication.

Continuing, Sir John said that he happened to be on the London and Home Counties Traffic Advisory Committee, in the interests of the National Horse Association, and when he was President of that Association, in 1933, he drew up, with Mr. McIntosh, a set of rules for the guidance of horse transport in London streets, and he was arranging with the Secretary of that committee to have those rules printed and published and to be put up in the stables of all horse transport users.

The President at this point said that perhaps Sir John would like to hear what the Association had done in that matter.

The Secretary said that on September 27th a letter was addressed to the Minister of Transport on the Association's behalf.

September 27th, 1935.

Sir,

The attention of the National Veterinary Medical Association has been drawn to the suggested action of your department, whereby the sanction of Parliament may be sought for the removal of horses and horse-drawn vehicles from the streets of London and other large cities.

Such prohibition would entail distress to many city and country veterinary surgeons who are dependent upon the city horse and horse-breeding for a livelihood.

My association believes that by constructive efforts it would be possible to retain horse transport, admittedly the most economical for some purposes. With this end in view I am to suggest that the help of experienced veterinary surgeons should be sought with the object of formulating proposals for the mitigation of those circumstances which have led to the threat of removal.

Should you so decide, the National Veterinary Medical Association would be pleased, if called upon, to appoint representatives qualified to render such assistance.

I am, Sir,
Your obedient Servant,
F. Knight.
General Secretary.

The Rt. Hon. L. Hore-Belisha, M.P.,
Ministry of Transport, S.W.1.

The Secretary added that an acknowledgment of the receipt of that letter had been received from the Minister of Transport that morning.

In reply to the President's enquiry as to whether he had a proposition to move, Sir John Moore proposed that the N.V.M.A. appoint a small sub-committee to co-operate with representatives of the National Horse Association in any further measures that body may decide to take to oppose the threatened banning of the horse from the streets of London and other large cities.

The proposition was carried unanimously and the sub-committee was then appointed as follows: The President (Captain J. R. Barker), Mr. McIntosh, Sir John Moore and Mr. H. W. Dawes.

There was now laid before the Council a letter from the National Veterinary Medical Association of Sweden, inviting the N.V.M.A. to send a representative to a meeting in Stockholm on October 6th, 1935, on the occasion of their 75th anniversary.

Colonel Simpson: "I move that we send a delegate and that we ask our President to act."

The President pointed out that the date of the anniversary meeting was rather close and he therefore thought they should not lightly entertain the proposal to send a delegate unless it was their earnest desire to do so.

The Council gave unanimous assent to the proposition.

Letters which had passed between the Merioneth County Branch of the National Farmers' Union and the Ministry of Agriculture, on the subject of the revised instructions issued to Veterinary Investigation Officers, were now read to the Council as follows:—

National Farmers' Union,
Merioneth County Branch,
Church Street,
Pennal, Machynlleth.
July 29th, 1935.

The Secretary,
Ministry of Agriculture and Fisheries,
Whitehall Place, S.W.1.

Sir,

Veterinary Investigation Officers.

At a meeting of the County Executive Committee of the Merioneth Branch of the National Farmers' Union held at Dolgelley, on Saturday, June 15th, 1935, consideration was given to the new instructions issued to Veterinary Investigation Officers by the Ministry of Agriculture and Fisheries.

The County Committee felt that these new instructions will mean a serious curtailment of the excellent work which has been done in the past by the Investigation Officer for this area.

In particular the committee take exception to the regulation which makes it necessary for the farmer to call in his veterinary practitioner when he wishes the Investigation Officer to visit his farm to investigate a particular disease which

is causing or likely to cause him considerable losses.

The committee feel that farmers generally will not be prepared to pay the veterinary practitioners' fees under these conditions, and consequently they will not avail themselves of the services of the Veterinary Investigation Officer. They wish to point out that this is particularly the case with sheep and lamb diseases, about which there is comparatively little known, and the new regulations will in their opinion militate against progress in the investigations of these diseases. Moreover it will make it difficult to arrange for large scale experimental inoculations on farms for the control of particular diseases.

The committee fully appreciate the excellent work which has been done in the county by the Investigation Officer during the last few years, and the progress which has already been made towards the control of diseases, particularly those affecting sheep and lambs, and they trust the regulations will be amended in such a way that farmers will be able to call in the Investigation Officer without having to pay a visiting fee to their veterinary practitioner.

Yours faithfully,
(Signed) M. Llewelyn Jones,
County Secretary.

. . . . .

Ministry of Agriculture and Fisheries,
10, Whitehall Place,
London, S.W.1.
August 19th, 1935.

Sir,

Veterinary Investigation Officers.

The Ministry has given careful consideration to your letter of the 29th ultimo, in which representations are made on behalf of the County Executive Committee of the Merioneth Branch of the National Farmers' Union in favour of the amendment of the Instructions issued to Veterinary Investigation Officers by the Ministry so as to enable these officers to investigate outbreaks of disease on farms without requiring the farmer to call on the services of his practitioner.

I am to say that these revised instructions were issued after prolonged negotiation with the National Veterinary Medical Association, and arose out of representations made by the Association to the Ministry that the work of the Veterinary Advisers tended to encroach on the legitimate sphere of the veterinary practitioner, as a result of which a measure of hostility to this branch of the Agricultural Advisory Service was arising on the part of members of the profession. The Ministry is clearly of the opinion, which it feels sure your committee will share, that the effectiveness of the Veterinary Advisory Service in attempting to control and prevent disease of livestock would, in the long run, be impeded by a pronounced feeling of hostility on the part of the profession, and, on the other hand, would be enhanced if the goodwill of the practising veterinarian were secured.

Further, the Ministry must accept as a guiding principle that it is not the function of a Veterinary Investigation Officer to give advice to farmers on normal outbreaks of disease with which it is competent for the veterinary practitioner to deal.

It was in the light of these views that the instructions were amended in such a way as to provide that the farmer would not be entitled to enlist the services of the Veterinary Investigation Officer as a first step on the occurrence of an outbreak of disease. On the other hand, the Ministry has received full assurances from the National Veterinary Medical Association that they have no wish to hinder in any way the work of Veterinary Investigation Officers in connection with the investigation of obscure diseases, or the prevention or control of outbreaks of disease which ordinarily the practitioner could not be expected to undertake.

The Ministry trusts, therefore, that the new instructions, if carried out in the spirit in which the negotiations were conducted on the part both of the Ministry and the Association, will prove not to have the result, feared by your committee, of curtailing the work of Veterinary Investigation Officers, but will have the effect of making such work more effective through the co-operation of the body of practitioners. At the same time, the Ministry will carefully watch the position, and if evidence arises that practitioners are in fact acting in such a way as to limit the efficiency of this service, the Ministry will re-open discussions with the National Veterinary Medical Association.

A copy of your letter and of the Ministry's reply are being sent to the National Farmers' Union and to the Association.

I am, Sir,
Your obedient Servant,
(Signed) V. E. Wilkins.

The County Secretary,
National Farmers' Union,
Church Street, Pennal.
Machynlleth.

Dr. Share-Jones moved "that a copy of the correspondence be sent to the practitioners in that area."

Continuing, Dr. Share-Jones stated that it came as a surprise to him that the Government as represented by those departments had not known what was actually occurring in that great county: the veterinary surgeons, as representing veterinary science were being rapidly driven out of the county. That was either a good thing or a bad thing, but in any event it was a thing of which note should be taken by the Government. If they had, in a great county like that, matters which were militating against the practice of veterinary science, and which were creating in the minds of the farmers the feeling that they could do without it, some note should be taken of that. As one who knew that county well, he hoped that the Association would draw the attention of the Ministry to the fact that something was happening there which was much more serious than the matters dealt with in that correspondence, this being nothing less than the crushing out of our science.

Mr. Tudor Hughes, speaking as one who lived not far from the area in question, said that he thought that the whole crux of the matter was that the veterinary profession was not flourishing in Merioneth. As contended in the letter from the National Farmers' Union, farmers did not wish to pay the veterinary practitioners' fees under the condition laid down in the regulations which made it necessary for

the farmer to call in his veterinary practitioner when he wished the Investigation Officer to visit his farm. In such counties there was no living for the veterinary surgeon to be made, and that perhaps would more particularly apply to the upland, sheep-farming counties than to those at a lower level where there were more valuable animals. He would like to support the reply made by the Ministry, because if restrictions were relaxed in one county the rest would follow.

Mr. Edwards (Mold) observed that the complaint of the Merioneth Farmers' Union was directed against the new regulations for the Veterinary Advisory Scheme, and that there was no suggestion of irregularity on the part of the practitioners. The complaint was that the farmers now found that they could not get the free service of the Veterinary Investigation Officer except through and in collaboration with the practitioner concerned. This was one of the main objects of the long negotiations between the Ministry and the N.V.M.A. which had preceded the drawing up of the revised regulations, and he did not think that that was a complaint that admitted of any sympathy from that Association.

In regard to the complaint that the activities of the Veterinary Investigation Officers would be interefered with, he did not think that anyone who had studied the new regu'ations and who was aware of the further negotiations regarding the anærobic diseases of sheep with the Agricultural Research Council, could feel that there was any foundation for a complaint of that sort in any way. He thought that the feeling of the Advisory Committee was that, if anything, the position of the Investigation Officers with regard to any genuine technical investigation or experimental work was more than sufficiently safeguarded. In his view, if the Bangor centre administered the Advisory Scheme strictly according to the spirit and the letter of the new regulations, then they would find that the practitioners in the area would give the scheme very loyal support and would make increasing use of it, but, on the other hand, if any attempts were made to weaken those regulations or to disregard them, then he believed and hoped that they wou'd equally vigorously protest. In his view both the nature and the volume of the present complaints from Merioneth were the best proof and measure of the success of the regulations in protecting the position of the practitioners on the one hand, and on the other in safeguarding the officers from being called upon to give their services in an irregular manner.

These were the main objects sought to be attained by the Ministry and this Association in framing the new Regulations, and he trusted they would continue to maintain them as essential to the success of the Advisory Scheme.

Dr. Whitehouse thought that the Council should express gratification with the Ministry's reply.

The President said that he would see that that was done.

The remaining item of correspondence was the following letter from the Agricultural Research Council:—

Agricultural Research Council,
6a, Dean's Yard,
London, S.W.1.
September 26th, 1935.

Sir,

I am directed by the Agricultural Research Council to refer to your letter of February 5th last on the subject of investigations into certain sheep diseases which are being carried out by Research Institutes and Veterinary Investigation Officers under the supervision of a committee of the Council and in collaboration with the Ministry of Agriculture and Fisheries. The Council have now had an opportunity of considering the matters raised by your Association in the letter referred to, in the light of a discussion which subsequently took place between representatives of your Association, of the Council's committee, and of the Ministry.

The Committee attaches great importance to the goodwill and co-operation of veterinary practitioners being secured in connection with this extensive enquiry, and I am to reiterate their appreciation of the promise of co-operation already referred to in the first paragraph of my letter of March 11th.

The Council understand that your Association views with some apprehension the suggestion that farmers should be invited to send material direct to the laboratories, even in cases where it would be possible for a veterinary surgeon to be called in. On that point I am to convey the Council's assurance that there is no suggestion that the scheme—which is solely investigational in character—should be used as a means by which the farmer might obtain advice on diseases of sheep which it would be competent for the veterinary surgeon to give. Apart from the work of the Research Institutes in connection with the scheme, the enquiries will be carried out by the Veterinary Investigation Officers in England and Wales, who are, of course, subject to the instructions recently agreed between your Association and the Ministry of Agriculture. The Council, in consultation with the Ministry, would propose in this case, however, to bring especially to the notice of all who are engaged in the enquiry a request to the effect that "should it be found from examination of material sent to the laboratory that the disease affecting the sheep was one that the veterinary practitioner could reasonably be expected to treat, the laboratory should instruct the farmer accordingly. For the purposes of these enquiries the laboratory should only proceed with an investigation, when it was essential to employ laboratory methods in order to obtain as complete and accurate data as possible."

The Council have considered the Association's suggestion that arrangements should be made for the results of examinations of material to be communicated to the farmer by his veterinary surgeon, and not by the laboratory concerned.

It is felt, however, that laboratories should be at liberty to communicate the results of their examinations simultaneously to the farmer and to the practitioner. If this were not done there might be interruptions and delays in notifying the results of a laboratory diagnosis to a farmer, and these might lead to his interest diminishing and to the consequent loss of further material and information. This notification of the diagnosis to the farmer would not involve the giving of advice on treatment of any recognised disease; the position concerning treatment has already been stated above.

The Council are glad to note that the Association will encourage its members to take part, in collaboration with the research officers, in the experimental field measures for the prevention of these diseases. The Association will appreciate, however, that the question of the policy to be followed, if and when effective measures of prevention are discovered, is not one which comes within the province of the Council, whose sphere is investigational, and not administrative. Representations in such a case should be made to the Ministry of Agriculture and Fisheries.

In conclusion, I am to express the hope that the Association will now feel itself in a position to commend the scheme to the favourable consideration of its members. The Council feel that there is much to be said for the suggestion made by your President at the Conference referred to in the first paragraph of this letter, that local meetings might be arranged with the various Divisions of your Association, at which the Veterinary Investigation Officers should consult with them regarding the best methods to be adopted for obtaining information and material in their districts.

I am, Sir,
Your obedient Servant,
JOHN JAMESON.
Assistant Secretary.

The General Secretary,
National Veterinary Medical Association,
2, Verulam Buildings,
Gray's Inn,
W.C.1.

Dr. WOOLDRIDGE proposed that the letter be accepted.

Professor WOOLDRIDGE seconded the motion.

The PRESIDENT said that he thought the Council might pay tribute to their past President, who conducted a deputation to the Agricultural Research Council. (Hear, hear.) The Council had granted practically the whole of what was requested by that deputation, and as a member of it he regarded that as a very satisfactory outcome. (Applause.)

Proceeding, the President said that the Agricultural Research Council wanted them to commend the scheme to the members of the Association. Would someone propose that some action be taken—by publication in *The Veterinary Record* and perhaps by an editorial?

The Council approved the President's suggestion.

MEMBERSHIP

The SECRETARY reported that the number of members on the register of the Association at September 30th, 1935, was 1,720.

Obituary List.—The Secretary then read the obituary list, Council standing the while in tribute to the memory of the deceased members: Mr. F. J. Hood (Edinburgh), Lieut.-Colonel W. C. Lowe (Eccleshall) and Mr. W. Cawthorn (Harlesden).

New Members.—The following, having submitted nomination forms, duly completed, and paid their subscriptions, were unanimously elected to membership: Messrs. C. S. Adams (Dursley), G. S. Beattie (Milltimber), R. P. Byrne (Dungarvan), Andrew Campbell (Penzance), W. Castles (Belfast), W. H. Chase (Culmstock), W. G. Clarke (Armagh), H. W. Crawshaw (Margate), Andrew Cruickshank (Skipton), J. K. S. Elmslie (Birkenhead), A. W. Gledhill (Uganda), P. N. C. Green (Leamington Spa), W. M. Henderson (Edinburgh), J. Hickman (London), Jas. R. Jackson (Coleraine), Mrs. K. G. R. Kelly (Liverpool), Messrs. V. J. S. Leslie (Glasgow), J. McIndoe (Boston), D. McKelvey (Newtownards), J. McLinden (Glasgow), A. McNiven (Dumbarton), Miss E. Hilda Patchett (Chorlton-cum-Hardy), Miss Phyllis M. Peake (Southsea), Messrs. A. Riggs (Inverness), Martin Senior (Taunton), R. R. Setterfield (Liverpool), E. J. Simmons (Ministry of Agriculture), F. G. Waddington (Standish), Miss P. L. Williams (Peaslake) and Mr. G. T. Willows (Lymington).

With the addition of the above 30 members, the number of members of the Association now stood at 1,750, which, said the Secretary, constituted a record. (Applause.)

Reports of Standing Committees

Organising Committee

Captain J. R. RIDER (Chairman) read the following report of this committee and moved its reception and adoption:—

A meeting of the Organising Committee was held at the Offices of the Association on Monday, September 30th, with the Hon. Secretary (Captain J. R. Rider) in the chair.

The minutes of the previous meeting were read and signed as correct.

Arising from the minutes, a letter was read from the Chief Secretary, R.S.P.C.A., reiterating that it had been impressed upon the Society's workers throughout the country that except in cases of extreme urgency, none but the animals of the poor should receive treatment at their dispensaries, and that this had invariably been pointed out to the press.

Also arising, and in connection with the resolution from the Eastern Counties Division on the subject, a letter was read from the Livestock Offices Association (the central body of the tariff offices) intimating that it is a rule of that Association that veterinary certificates are required to be furnished by members of the Royal College of Veterinary Surgeons, and that only during the War was an exception made to this rule when the certificates of "acting veterinary

surgeons" were in certain circumstances accepted.

It was decided to request the Livestock Offices Association to discontinue the acceptance of certificates from any "acting veterinary surgeon" who may still be on their register.

It was understood from the reply received that the British Medical Association has not considered the question of the remuneration of medical officers attending officially at race meetings. After further consideration it was decided to ask the Dumfries and Galloway Division whether it had any suggestions to offer in support of its resolution that veterinary surgeons should receive fees for their attendance at race meetings and dog shows.

Consideration was given to a letter from a veterinary practitioner in London, suggesting that in districts where there is a large population of the poorer classes, veterinary surgeons should set aside a special hour each day, to be called the "Free Clinic Hour," during which time treatment and advice should be absolutely free.

It was decided to point out, in reply, that this suggestion was already met in the Association's decentralised scheme of free treatment, and that where all veterinary surgeons in a locality were providing these facilities in conjunction with the R.S.P.C.A., there was no objection to that Society advertising where this professional treatment was available.

It was agreed to seek from the R.S.P.C.A. full details of the arrangements made for the giving of free treatment in the Hendon district.

In accordance with the instructions of the Council, the Committee considered the report of the Committee on Fur-Bearing Animals, etc., copies of which were circulated to Members of the Council shortly after the meeting held in Edinburgh in July last.

After discussion, the committee resolved to recommend:—

(i) That Recommendations 1, concerning teaching facilities; 3, suggesting provision of research scholarships, and 5 (iv) suggesting co-operation with breeders' societies, be transmitted to the Royal College of Veterinary Surgeons.

(ii) That Recommendations 2, suggesting the arrangement of post-graduate courses; 4, suggesting *Record* publication of literature; 5 (i) recommending further action by Divisions, and 5 (iv) be adopted by the N.V.M.A.

With regard to Recommendations 5 (ii) and (iii) however, the committee do not recommend any action on these recommendations.

Also at the request of the Council, the following resolution from the Yorkshire Division was discussed:—

> "That the appropriate Committee of the N.V.M.A. be urged to take all possible steps to ensure that the abbreviation "Vet." is not used by the public when referring to members of the veterinary profession in the press or by public announcement, and that such members be referred to by the proper title of Veterinary Surgeon."

It was decided to recommend that a reply be sent to the Yorkshire Division to the effect that the Association was doing and would continue to do all that is possible to obviate the use of this objectionable abbreviation.

The Secretary reported that the proceedings of the Belfast Congress had received satisfactory publicity in Ireland, but that very little about the meetings had appeared in the press on this side, notwithstanding that the Press Association's Resident Correspondent in Belfast had been present at some of the meetings.

The committee approved the action taken on the authority of the Chairman which had led to a misleading statement appearing in *The Tail Wagger Magazine* being removed from that publication.

The motion was seconded by Mr. Nelder.

The President having declared the report open for discussion, Mr. Steele Bodger said that he would like to ask if pressure of any sort was brought to bear on the representative of the Press Association to secure publicity for the proceedings of the Association in other journals.

Captain Rider replied that he was not aware that any steps had been taken or could be taken in that connection, but the point would be noted for future reference.

The report of the committee was adopted without further discussion.

Parliamentary Committee

The following report of this committee was read by the Chairman (Captain J. C. Coleman), who moved its reception and adoption:—

The Parliamentary Committee met at the Offices of the Association on Monday, September 30th, 1935, Captain J. C. Coleman occupying the chair.

The minutes of the previous meeting were read and signed as correct.

Arising from the minutes, a reply was received from the Ministry of Agriculture stating that whilst the Ministry could not undertake to submit to the Association drafts of all Orders which it may propose to make under the Diseases of Animals Act, 1935, the Ministry would consult the Association in connection with any Order concerning which it is considered that the N.V.M.A.'s advice and experience can be of assistance to the Department.

The motion for the reception and adoption of the report was seconded by Major Rabagliati and carried unanimously.

Veterinary Officers' and Public Health Committee

Mr. G. P. Male (Chairman) read and moved the reception and adoption of the following report of this committee:—

A meeting of the Veterinary Officers' and Public Health Committee was held at the Offices of the Association on Monday, September 30th, 1935, with Mr. G. P. Male in the chair.

The minutes of the previous meeting having been published, were taken as read and signed as correct.

Arising from the minutes, a reply was read from the Ministry of Agriculture intimating that it would not be practicable to introduce measures for regulating the exposure of calves in markets, and that existing Orders were considered to be adequate for the protection of calves in transit.

In the same connection a letter was read from

the National Farmers' Union giving copy of a press notice calling the attention of farmers to the serious losses caused by "white scour," which had been issued by the Ministry following upon representations made by the Union upon receipt of the Association's communication to them on the subject.

It was decided that the foregoing facts should be communicated to the Chairman of the Association's Committee on "white scour."

Also arising, the Secretary reported that the Eastern Counties Division had unanimously agreed to modify the resolution passed at their Diss meeting—"That every qualified veterinary practitioner should be entitled to give a certificate under the Accredited Herds Scheme" and to recommend instead—"That the examination of such herds should not be limited to those holding appointments under the Diseases of Animals Acts," as suggested by the committee.

Representations according with this revised recommendation have, of course, already been made to various Government Departments, but the Committee will continue to press for its adoption whenever opportunities occur.

A reply was received from the Cheshire County Council stating that as they have appointed a whole-time veterinary staff for the routine inspection of dairy cattle and other duties under the Milk and Dairies Acts and Orders, they are unable to utilise the services of general practitioners in the working of the "Accredited Herds" Scheme.

It was understood that the Hon. Secretary of the Cheshire Veterinary Inspectors' Section of the Lancashire Division thought that nothing further could be done by the Association, and in this view the Committee concurred.

Consideration was then given to a Scheme for the Eradication of Bovine Tuberculosis, submitted by Mr. J. W. Hall Masheter, copies of which had been circulated to members of the Committee.

It was resolved to recommend that Mr. Hall Masheter be sent a letter of thanks for the great trouble he had taken in preparing and submitting this scheme, and that he be informed that the committee will be renewing consideration of it when copies are available of the report on the Spahlinger vaccine just issued by the Government of Northern Ireland.

It was decided to support the following resolution passed by the Public Health Section of the Belfast Congress and to recommend its adoption by the Council:—

> "That a resolution that all animals intended for human food be as far as possible examined *ante-mortem* and *post-mortem* and that all meat should be stamped, be sent to the appropriate Government Departments of England, Scotland and Ireland, and that these Departments be also urged to make more intensive use of the services of County Veterinary Staffs in connection with meat inspection in county areas, as recommended by the English Departmental Committee on Meat Inspection."

A copy of the Register of Attested Herds, giving particulars of herds in respect of which certificates have been issued up to August 31st last, both under the scheme for England and Wales and the corresponding scheme for Scotland, was submitted, this having been received from the Ministry of Agriculture for the information of the Association.

The report was adopted subject to the following alteration of the resolution passed by the Public Health Section of the Belfast Congress: that the words ". . . . and that these departments be also urged to make more intensive use of the services of county veterinary staffs in connection with meat inspection in county areas" be amended to read: ". . . . and that these departments be also urged to make more extensive use of the services of veterinary surgeons in connection with meat inspection in rural areas."

Appointments Committee

The report of this committee was read as follows by Major Rabagliati (Chairman), who moved its reception and adoption:—

The Appointments Committee met at 2, Verulam Buildings on Tuesday, October 1st, 1935, under the chairmanship of Major D. S. Rabagliati.

The minutes of the previous meeting were read and signed as correct.

Arising from the minutes, a letter was read from the Town Clerk of a local authority intimating that the Association's letter with regard to the salary of the Council's Veterinary Officer had been referred to the appropriate committee for consideration, and that their decision would be communicated to the Association in due course.

Also arising from the minutes, consideration was given to the reply received from the Society of Medical Officers of Health with reference to the minimum scale of salaries laid down by the Association for whole-time veterinary officers. The letter gave details of the measures that had been taken by the medical and dental associations to secure the adoption of their scales, and the Society asked for information as to the steps taken by the N.V.M.A. in the same direction so that they could decide whether they could advise their members to support the N.V.M.A. scale.

It was agreed to endeavour to arrange for a small deputation to wait upon the Society of Medical Officers of Health to discuss the matter, and that in the event of a meeting being arranged, the deputation should consist of Major D. S. Rabagliati and Major DeVine.

The Secretary reported that the representations made by deputation to the Worcestershire County Council in June last had proved successful. The salary of the post of county veterinary officer had been brought into conformity with the Association's scale, and the appointment advertised in *The Veterinary Record*.

Consideration was given to the position which had arisen in consequence of the salaries fixed by the Westmorland and Oxfordshire County Councils for whole-time veterinary officers being below the Association's scale for such appointments and the refusal of these bodies to discuss the matter with representatives of the Association.

It was agreed to make further enquires in each case, and also to invite members of the profession to advise the Association of proposals to make local authority appointments which may come to their notice, in order that any necessary action may be taken before the local authorities concerned arrive at any definite decision.

The Chairman reported on the efforts which had been made to secure a better salary for the post of veterinary surgeon to the Isle of

Man Government, recently advertised in *The Veterinary Record.* After a letter had been read from the Government Secretary explaining certain factors which had been taken into consideration in fixing the remuneration offered, the Chairman's action was approved.

Communications were read from a member seeking the assistance of the committee in a matter of salary. No decision was arrived at pending the receipt of further particulars which the Secretary was instructed to obtain.

The motion was seconded by Dr. WHITEHOUSE and carried.

Finance and General Purposes Committee

Lieut.-Colonel SIMPSON (Chairman) read and moved the reception and adoption of the following report of this committee:—

A meeting of the Finance and General Purposes Committee was held at the Offices of the Association on Wednesday, September 4th, 1935, with Lieut.-Colonel P. J. Simpson in the chair.

The minutes of the previous meeting were read and signed as correct.

Arising from the minutes, the Hon. Treasurer raised the question as to the subsistence allowance which should be paid in the case of members of deputations, etc., whose absence from home on the Association's business was less than 24 hours.

After discussion, it was agreed to recommend to the Council that the following should be the scale in future:—

(1) For an absence from home for a period exceeding six hours, a day allowance of 8s. 6d.

(2) For an absence from home for a period of 24 hours, a day and night allowance of £1 5s.

(3) For periods of absence in excess of 24 hours, or multiples of 24 hours, the allowance under (1) may be charg.d in addition when the extra time amounts to six hours or more.

Following upon inspection earlier in the afternoon of No. 22, Russell Square, W.C.1, the committee gave consideration to the report on those premises by Mr. E. C. Harris, Chartered Quantity Surveyor, who had been engaged to survey the property, to furnish plans showing the necessary alterations and an estimate of the total financial outlay involved in the event of the premises being taken over.

After a very full discussion, the committee decided to recommend to the Council that no further steps be taken in regard to No. 22, Russell Square.

Efforts to obtain better accommodation are, however, being continued, and with this end in mind the committee decided:—

To seek the views of the Royal College of Veterinary Surgeons on the suggestion made by the President that the Royal College and the N.V.M.A. might combine in securing premises that could house the two bodies.

The committee also renewed its consideration of the following resolution from the Scottish Branch, having regard to the discussion at the Edinburgh Meeting of Council:—

"That in view of the poor representation of Scotland on the committees of the Council of the N.V.M.A. the time is now opportune to discuss the possibility of the payment of expenses of Branch and Division representatives. It is urged that the Secretary, failing whom one other representative to the Council of the N.V.M.A., who may be nominated by the Branch or Divisional President, should be entitled to claim his expenses from the funds of the N.V.M.A."

As has been reported to the Council on a previous occasion, the committee is in favour of the principle that representatives of Divisions should be paid at least some part of their travelling expenses in attending committee or Council meetings of the parent body.

It is mainly on the question of the source of such financial assistance that the Committee's views are at variance with the views of those who claim that these expenses should be defrayed by the N.V.M.A.

The committee fully realises how very important it is that all Divisions should be represented at meetings of the Council, but it should be borne in mind that under present arrangements these representatives are appointed by the Divisions and not by the N.V.M.A., and that the "National," as a body, has no control over them. Moreover, it is felt that the principal reason for the attendance of such representatives at meetings of the Association is to look after the interests of the particular Division which they represent.

It thus seems to the committee unreasonable that the "National," having had no hand in the appointment of Divisonal representatives and no power over their instructions, should be expected to pay even a part of their expenses when they attend the quarterly meetings of the parent body.

In so far as the Branches are concerned, these are in all instances represented by the Divisions of their areas and therefore are already catered for.

For the foregoing reasons, the committee regrets that it cannot recommend the Council to accede to the request made by the Scottish Branch.

The committee would, however, recommend that all Divisions should again be asked to give consideration to the payment of the expenses of their own representatives to the Council and that the suggestion be made that each Division should consider increasing its membership fee in order to meet such expenses.

At the request of Council, consideration was given to the question of the appointment of a President-Elect and the suggestion that he be elected a Vice-President of the Association.

The committee resolved to report to Council that they were of opinion that the office of President-Elect should be established, but that they did not consider that it would be necessary to have the occupant elected as a Vice-President.

The matter of a composite subscription to cover membership of the Association and any one Division remains under consideration.

The HON. TREASURER (Captain W. G. Wragg) now made a statement regarding the finances of the Association during the quarter, this being approved.

In commenting thereupon, the Hon. Treasurer said that he might remind new members of Council that that was only a statement governing the past three months, and as the Council would not meet again that year they might like

to know in what state the finances of the Association were.

Their main sources of income, as members would know, were subscriptions, sales, sundries and advertisements, and up to the end of August the Association were £100 better off than they were at the same time the preceding year. That did not seem much, perhaps, continued the Hon. Treasurer, because they had a lean time last year, comparatively speaking, on account of additional and non-recurring expenditure, but he anticipated that if the Council did not authorise any expenditure other than what could be regarded as ordinary, the Association would return again to a normal excess of income over expenditure, which was between £1,000 and £1,200 per annum, as judged by the returns over the past 13 years.

In conclusion, the Hon. Treasurer observed that he would like to say that he omitted to write and thank the members of Council for re-electing him and showing their continued support of him as Hon. Treasurer. He desired to take the opportunity of making good that omission. (Hear, hear.)

Mr. Steele Bodger pointed out that there was one omission from the report of the Finance and General Purposes Committee, namely, that a vote of thanks was passed to Mr. McIntosh and Major Kirk for the trouble they had gone to on behalf of that Association in regard to the premises at No. 22, Russell Square.

Colonel Simpson expressed regret for that omission, adding that a vote of thanks was probably recorded in the minute book.

The President having replied that that was so, the report was adopted, Professor Wooldridge having seconded the motion.

Editorial Committee

The report of this committee was read as follows by Major-General Sir John Moore, the Chairman, who moved its reception and adoption:—

The committee has devoted much space in *The Veterinary Record* during the past quarter to the threatened banning of horse-drawn traffic from the streets of London and other large cities. This action followed upon a minute that the question of the disappearance of the horse was anxiously debated by the committee, which is unanimously of the opinion that the strongest possible steps should be taken at every opportunity to prevent this threatened calamity.

During the period under review no decisions have been taken by the committee which call for special comment in this report, but a number of proposals await discussion at the next meeting devoted to the consideration of "policy."

Publication has been continued at an average of 40 pages weekly, but mention should be made of the issue on August 24th of a special number fully descriptive of the proceedings at the highly successful Congress held at Belfast. This number, which was greatly enlarged and well illustrated, appears to have been much appreciated by the members.

The motion, having been seconded by Captain Coleman, was carried without discussion.

MEMBERSHIP OF STANDING COMMITTEES

The next business before the Council was to receive the report of the committee appointed to make nominations for the following Standing Committees for the year 1935-36: Appointments, Finance and General Purposes, Veterinary Officers' and Public Health, Organising, Parliamentary, Editorial.

This report was as follows:—

A meeting of the Nominations Committee appointed by the Council on August 2nd met at the offices of the Association on Tuesday, October 1st, 1935.

The President occupied the Chair, and there were also present: Captain J. C. Coleman, Mr. E. P. Edwards, Captain O. V. Gunning, Mr. J. Holroyd, Major-General Sir John Moore, Major R. H. H. Over, Major D. S. Rabagliati, Mr. H. W. Steele Bodger, Captain J. R. Rider, Dr. W. R. Wooldridge and Captain W. G. Wragg.

It was resolved to recommend:—

(i) That in accordance with the Articles of Association, the President, the Hon. Secretary and the Hon. Treasurer be *ex-officio* members of all committees.

(ii) That the Standing Committees for the year 1935-36 be constituted as follows:—

Appointments

Bywater, H. E.
Buxton, J. B.
DeVine, W. J. B.
Duff, H. M. M.
Miller, W. C.
Moore, J.
Over, R. H. H.
Rabagliati, D. S.
Smythe, R. H.
Simpson, R.
Steele Bodger, H. W.
Tweed, W.
Whitehouse, A. W.
Wooldridge, W. R.
Vine, S. B.

Finance and General Purposes

Bell, H.
Bullen, R. E. C.
Craig, J. F.
Dawes, H. W.
Dunkin, G. W.
Kirk, H.
McIntosh, J. W.
Macqueen, J.
Moore, J.
Mitchell, W. M.
Nairn, W.
Steele Bodger, H. W.
Willett, R. A.
Wooldridge, G. H.
Wooldridge, W. R.

Veterinary Officers' and Public Health

Campbell, D.
Coleman, J. C.
Dawes, H. W.
DeVine, W. J. B.
Fox, J.
Gunning, O. V.
Male, G. P.
Motton, S. J.
Over, R. H. H.
Rabagliati, D. S.
Standley, H. P., senr.
Simpson, R.
Steele Bodger, H. W.
Wilkinson, T.
Wooldridge, W. R.

Organising

Coleman, J. C.	Moore, J.
Craig, J. F.	Nelder, R. B.
Dalling, T.	Over, R. H. H.
Dawes, H. W.	Standley, H. P., senr.
Gunning, O. V.	Steele Bodger, H. W.
Kirk, H.	Wilkinson, T.
Male, G. P.	Wooldridge, W. R.
Mitchell, W. M.	

Parliamentary

Buxton, J. B.	Nelder, R. B.
Campbell, D.	Rabagliati, D. S.
Coleman, J. C.	Share-Jones, J. T.
Dunkin, G. W.	Simpson, R.
DeVine, W. J. B.	Steele Bodger, H. W.
Hobday, F. T. G.	Townson, W. K.
Male, G. P.	Wooldridge, G. H.
Moore, J.	

Editorial

Bywater, H. E.	Moore, J.
Dunkin, G. W.	Pool, W. A.
Edwards, J. T.	Reynolds, E. Brayley.
Kirk, H.	Stableforth, A. W.
Lovell, R.	Steele Bodger, H. W.
Macqueen, J.	Wooldridge, G. H.
McCunn, J.	Wooldridge, W. R.
Miller, W. C.	

The Nominations Committee desires to point out that in making the foregoing selections, due regard was paid to the wishes of the Divisions and of individual members.

The report being declared open for discussion by the President, Professor Mitchell asked if it was correct to say that the members of those committees were appointed to hold office for twelve months. Was that really in accordance with Standing Orders, and should not those committees be appointed in July?

The Solicitor informed the Council that Standing Committes were appointed for the year or until such time as their successors were appointed.

ANY OTHER BUSINESS

Scarborough Congress

The Secretary said that the first matter arising under this head was to fix the date of the Congress to be held by the Association at Scarborough next year. The Deputy Mayor and the Publicity Manager of the Scarborough Corporation had been interviewed with reference to the date and they considered that the most suitable time would be either the first half of July or the latter half of September. At any other time during the season accommodation would be difficult to obtain and it was doubtful whether any of the hotels would be able to undertake the social functions.

The Deputy Mayor had promised that the Corporation would provide accommodation free of charge, and in the same building if possible, for the various meetings of the Congress and the exhibition of surgical instruments, drugs, etc.

It was also understood that the Mayor would accord the Association a civic welcome as well as a reception to be followed by a dance, and that arrangements would be made for those attending the Congress to be admitted without charge to the Marine Gardens, Corporation Swimming Pool and other amusements run by the local authority.

The Deputy Mayor had said that the Corporation were anxious to help in making the Congress a success and that their officials would be pleased to assist the Provisional Committee in every way possible.

After some discussion it was decided to recommend to the Provisional Committee that the Congress be held as early in September as possible.

The next business before the Council was the consideration of the report of the Special Committee appointed to deal with the communication from the Ministry of Agriculture, inviting observations upon a revised Tuberculosis (Attested Herds) Scheme. This report was read by the Secretary as follows:—

A Special Committee, appointed by the President owing to the urgency of the matter, met at 2, Verulam Buildings, on September 4th, to deal with a communication from the Ministry of Agriculture inviting by September 16th any observations which the Association may desire to make upon a revised Tuberculosis (Attested Herds) Scheme (England and Wales) a draft of which accompanied the Ministry's request.

The President occupied the chair, and Mr. H. W. Steele Bodger, Mr. G. P. Male, Major D. S. Rabagliati and Dr. W. R. Wooldridge were also present.

Mr. W. Nairn and Captain R. Simpson, who had also been invited to serve on the Special Committee, could not attend the meeting.

It was understood from the Ministry's letter that as the results had been disappointing, the Ministry had come to the conclusion that the existing scheme needed revision in order to make it more attractive to herd owners. With this object in view, it was proposed under the revised scheme to provide, in addition to the payment of the existing bonus of 1d. per gallon in respect of milk sold from "Attested Herds" under the provisions of the Milk Marketing Scheme, the following:—

(1) Financial assistance in respect of the cost of further tuberculin tests by the owner's veterinary surgeon in suitable cases in which the owner desires to qualify for a Certificate of Attestation and produces evidence to show that the number of reactors in the herd does not exceed 10 per cent. of all the bovine animals in the herd;

(2) a contribution towards the cost of the replacement of reactors under the circumstances and with the limitations described in paragraph 8 of the scheme, and

(3) facilities for additional official tests of herds which, on being subjected to the first official test, are found to contain one or more reactors.

After detailed consideration of the draft scheme, the committee agreed that the Association should welcome the changes proposed, especially those relating to the assisted testing of "Supervised Herds." It was considered by the committee that these revisions would go a long way towards removing the present difficulties, but that the opinion should be expressed that the success of the scheme would be greatly enhanced if the official tests could be carried out by veterinary practitioners in conjunction with and under the supervision of the Ministry's Inspectors. It was also decided to make certain other suggestions which the committee thought would improve the scheme and at the same time make it more attractive to herd owners.

On September 13th, the Ministry received a deputation composed of Mr. Steele Bodger, Mr. Male, Major Rabagliati and Dr. Wooldridge. The matters raised by the committee were explained and after their discussion the Ministry promised to give every consideration to the Association's suggestions.

At the invitation of the President, Mr. Male, speaking as a member of the deputation to which reference was made in the above report, said that perhaps he might explain some of the points that were put before the Ministry. The committee, while welcoming the new regulations, felt, that when a herd had become attested, if the testing were handed over to the officials of the Ministry, the veterinary surgeon in attendance would have no more to do with the testing, and that in consequence he would be losing touch with the herd—losing interest; and it seemed to the committee that that was not very desirable. In the new regulations, the Minister had approved of assisting owners of supervised herds by partly paying the fees of veterinary surgeons until they became attested, and they felt that if the Ministry would extend that principle a little further and seek the co-operation of the veterinary surgeon in attendance at the testing, by continuing his fees for that further testing, then it would keep alive the interest of the veterinary surgeon in the herd and be beneficial to the owner, and possibly to the Ministry by retaining the co-operation of the veterinary surgeon and in all other ways helping forward their scheme.

Continuing, Mr. Male said that he thought the Ministry saw their point of view, but the difficulty seemed to be with the Treasury—whether they would grant the additional authority for the continued payment of fees for the veterinary surgeon. As most of those herds in the Attested Scheme, up to the present at any rate, and probably those which would come in, many of them, later, were from Grade "A" (T.T.) herds, personally he failed to see where there was any moral obligation on the veterinary surgeon who had already carried out those tests for the owner who was producing Grade "A" (Tuberculin Tested) milk to come into the Attested Scheme when it meant in some cases great financial loss. One veterinary surgeon, discussing the matter with him and who had some very big herds among which were a number of herds producing Grade "A" (T.T.) milk, stated that if these clients took the scheme up it would mean a loss of £500 per annum to him and he would have to leave the district. The deputation discussed several other points which they thought would improve the scheme and he thought he might say that the deputation met with a very favourable reception. (Hear, hear.)

Professor Mitchell stated that in Scotland there was a preliminary scheme being run at present, and prior to its inception the scheme was considered by the Scottish Branch. The practitioners from the West of Scotland particularly welcomed the scheme, and the impression amongst them was that there would be a number of herd-owners who would be induced to come into it. The Scottish Branch, in forwarding their observations on the scheme, took the opportunity of putting in a copy of the N.V.M.A. Tuberculosis Eradication Scheme, because they thought that this was the first step which they advocated with a view to the possibility of the Department "going the whole hog" as soon as possible. He was glad to hear that really the Scottish Branch and the parent body were not at variance in this matter, though they had been working quite independently.

Parliamentary Science Committee

The Secretary read the following report of the Association's representatives (Major Dunkin and Dr. Wooldridge) on the Parliamentary Science Committee:—

At its meeting in Belfast the Council of the N.V.M.A. discussed the Draft Milk (Special Designations) Order, 1935, and observations of the Council thereon, which had been discussed at a meeting between a deputation from the N.V.M.A. and representatives of the Ministry of Health and the Ministry of Agriculture, were sent to your delegates on the Parliamentary Science Committee, together with the Draft Milk (Special Designations) Order of 1935. In a covering letter the general secretary drew our particular attention to the view of the Council of the N.V.M.A., that tuberculin testing and clinical examinations should remain, as at present, in the hands of veterinary practitioners, subject to collaboration with whole-time staffs where such exist.

In acquainting us with their findings and opinions, the Council had in mind that pressure might be brought to bear upon the Government to adopt them through the Parliamentary Science Committee when the new order should be tabled in the House for the usual period of 40 days.

We have very carefully read through these documents and others intimately related and we have no hesitation in saying that no good purpose would be served by referring the matters mentioned to the Parliamentary Science Committee. We take this opportunity of informing the Council that, as a result of our observations when we attended the only meeting which this committee has held since we were appointed as your delegates and from a study of certain correspondence and writings which have since made their appearance, the activities of the committee are, as its name implies, essentially of a scientific nature. We feel that reference to the committee of such matters as allocation of duties under Acts of Parliament would render us subject to the criticism that we had misunderstood the function of the committee, and the occurrence of such a state of affairs might bring the Association into disrepute. If, however, on further experience we find that this deduction is wrong we will notify Council accordingly.

Nevertheless we are agreed that certain parts of the Draft Milk (Special Designations) Order, 1935, might properly be discussed by the Parliamentary Science Committee.

G. W. Dunkin.
W. R. Wooldridge.

October 4th, 1935.

The report was received and adopted.

The next business before the meeting was to receive Dr. Wooldridge's report as the Association's delegate to the Health Congress of the Royal Sanitary Institute held at Bournemouth.

Mr. Steele Bodger moved that this report be published in *The Veterinary Record* and that the thanks of the Council be accorded in this instance to Dr. Wooldridge and in the previous instance to Major Dunkin and Dr. Wooldridge for their reports.

The following is the report of the Association's delegate (Dr. W. R. Wooldridge) to the Royal Sanitary Institute Congress:—

The Royal Sanitary Institute Health Congress at Bournemouth

This year I had the honour of acting as the Association's delegate to the Congress of the Royal Sanitary Institute and found myself at Bournemouth with a plethora of papers and discussions to attend and but four days in which to hear them. Unfortunately the majority of the sections sit concurrently, and so it is impossible for a single delegate to be present at all the meetings. The address of the President of the Congress, the Right Hon. the Earl of Malmesbury was a fairly spirited account of the views of a layman upon the growth of public health service. "The complex nature of modern life," he said, "has called into existence a huge army of 'experts' who, served by bands of devoted voluntary workers, have imposed upon the nation a somewhat exaggerated sense of the dangers to which human flesh is prone and the importance of the remedies. We have therefore to separate the real from the imaginary and establish between them a correct estimate of values." . . . "The question at once arises whether we are not becoming too much a spoon-fed nation, whether we have not gone too far." The expression of such views by the President of this particular Congress came somewhat as a surprise to your delegate, who, however, confesses that he is unable himself to decide whether a power of advertisement or true knowledge is the more essential attribute of such a high office.

On the following day I attended an interesting discussion on "Some Aspects of Herd Immunity" introduced at the conference of Medical Officers of Health by Professor W. W. C. Topley. This paper was such an excellent summary of this side of our work as well as that of our sister profesion that I should like to see it published in *The Veterinary Record*. The results of the work described, although mainly from experiments with mice, are generally applicable to our own herd problems and illustrate the importance of making experiments on large numbers of animals to secure significant results. That same morning, much to the surprise of certain members of our profession, the Sanitary Inspectors were discussing in their section "Milk problems, with special reference to Bacteriological and Biological Standards." To most of us this title would seem to be a topic rather outside their sphere of discussion, but we should remember that most problems are capable of being discussed at varying levels and that a paper reviewing this problem, even somewhat superficially, is likely to do good rather than harm in this section by creating an interest in the subject and by illustrating the difficulties of undertaking such work without adequate training. It is perhaps a little more difficult, as occasionally happens at these meetings, for veterinarians to listen to erroneous descriptions of pathological material, but it would seem to me that such mistakes should call for our sympathy rather than wholehearted denunciation if indeed it be deemed advisable that we should join in the discussion at all. Personally I feel that we should not go out of our way to upset our sanitary inspector colleagues, even if it means turning a blind eye and a deaf ear to some of their sayings, for so much of our work has to be carried out with their help that each body requires to understand the other thoroughly to ensure efficient service to the community.

The veterinary section was presided over this year by Professor Linton, who delivered a sound and stimulating address. A telling sentence culled from the address avers that "an efficient public health service should surely be concerned with the production of good cheap food as well as with the condemnation of food which is unfit for consumption": a reminder again that the profession must strive to do more in preventive medicine. Professor Linton was followed by Dr. Moran, of Cambridge, who opened a discussion on "Problems in the Preparation and Storage of Meat" which topic I had the privilege of developing along a more strictly veterinary line. An interesting discussion followed in which many butchers, sanitary inspectors, medical officers of health and veterinarians took part. Professor Share-Jones, as usual, played a spirited rôle in this discussion. On the Friday, Mr. J. N. Ritchie read a paper on "A General Review of the Legislation dealing with the Public Health Aspect of the Milk Supply," and Dr. Jordan ably opened the discussion, which was well sustained throughout the morning.

Finally, it seems to me that much good can come from the attendance of veterinarians at this Congress provided that they are willing

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Oct. 28th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4 p.m.

Nov. 7th.—Annual Dinner - Dance of the Central Division, N.V.M.A., at the Mayfair Hotel, W.1, 6.30 p.m. for 7 p.m.

Sept. 14th-18th, 1936.—N.V.M.A. Annual Congress, Scarborough.

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PERSONAL

Appointment.—Mr. F. H. Manley, M.V.Sc. [LIV.], M.R.C.V.S., Assistant Veterinary Officer to the Staffordshire County Council, has been appointed Veterinary Officer, Stoke-on-Trent.

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Marriage.—Buckler—Lonsdale: On Saturday, October 12th, at St. Peter's Church, Prestbury, Cheshire, by the Rev. A. Elstol, George Keith Buckler, M.R.C.V.S., of Stevenage, Herts., son of Mr. and Mrs. Alfred G. Buckler, of Crumpsall, Manchester, to Kathleen Beatrice Lonsdale, elder daughter of the late Dr. T. W. Lonsdale and Mrs. Lonsdale, of Parkfield, Upton, Macclesfield.

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R.C.V.S. OBITUARY

Hancock, William Ashton, Redcroft Road, West Drayton, Yiewsley, Middlesex. Graduated London, April 2nd, 1878; died October 18th, 1935.

The Late Mr. Hancock

In the passing of Mr. Hancock, which we announce with much regret above, the profession loses a valued member, who, whilst his main interest lay in public health work, might yet be termed a typical practitioner of the old school as being particularly well-founded in equine practice. A strong supporter of the "National," Mr. Hancock rarely missed a Congress, while he was a useful member of both the Central and Royal Counties Divisions, N.V.M.A.

Subsequent to his graduation, Mr. Hancock joined the Board of Agriculture and was posted to Newcastle. Coming south in 1895, he took over his father's practice in Uxbridge—an old-standing family business in which his son, Mr. R. Hancock, continues. Of a retiring disposition, the late Mr. Hancock took small part in public life, but wherever he resided he displayed a great interest in Church affairs, being a Vicar's warden at St. Margaret's, Uxbridge, and later on a prominent member of the Church community at Gerrard's Cross, where he went to reside in 1908 and again at West Drayton, to which town he moved in 1920. During his days at Uxbridge, Mr. Hancock gained some reputation as an athlete, being Captain of the Uxbridge Association Football team, while he was a most accomplished skater, having achieved the possibly unique feat of skating from Uxbridge to London and back along the Grand Junction Canal.

Amongst the large assembly present at the interment were the following members of the profession: Mr. R. Hancock (son), Dr. Sheather, Mr. R. A. Willett of Staines, Mr. Morris of Hounslow and Mr. Pickup of Barnet, the two last-named practitioners having been Mr. Hancock's colleagues on the Inspectorate staff of the Middlesex County Council.

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THE LATE MR. W. BARONS NELDER

In reference to the death of Mr. W. Barons Nelder, F.R.C.V.S., recorded in our last issue, *The Western Morning News* observes: "The veterinary profession in the West of England has lost one of its best-known members by the death of Mr. William Barons Nelder, at Renleigh, Pinhoe, near Exeter. For nearly half a century he had practised in the city and county, and was among the most highly esteemed veterinary surgeons. He retired from active practice some years ago, but continued to act in a consultative capacity. Although he had not been well, his death occurred unexpectedly following a heart attack.

"Mr. Nelder was a native of Tavistock, and served as a pupil under Mr. John Collings, veterinary surgeon, of Plymouth. He qualified at the Royal Veterinary College in London, in 1887, and went to Exeter a few years later. He took over the practice of Mr. J. A. Collings, of Paul Street. Mr. Nelder built up a reputation which made him well known in the West country. In addition to a big connection with the agricultural community, he was one of the best-known authorities on horses. In his younger days he was a keen hunting man and was one of the earliest followers of the East Devon Hunt.

"When Mr. J. A. Collings retired, with the rank of major, after 30 years' service as veterinary officer to the Royal First Devon Yeomanry, he was succeeded by Mr. Nelder, who served in that capacity for a number of years. His services were especially in demand during the Great War, and he retired with the rank of captain in the Royal Army Veterinary Corps.

"Mr. Nelder was also one of the oldest surviving members and past-president of the Western Counties Medical Association, an old-established professional body. He owned a farm at Pinhoe, and farmed it himself.

"Mr. Nelder leaves a widow and one son, who is also a veterinary surgeon and practised with his father."

The Funeral

A large number of mourners gathered in Exeter Cathedral on Thursday, October 17th, to pay a last tribute to Mr. Nelder, whose association with Exeter extended over a period of nearly 50 years.

The Cathedral service, which preceded interment at the Higher Cemetery, was conducted by Preb. E. Reid, who was accompanied by the

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to make contacts with the various other professions and trades represented at the meeting and that they will strive to co-operate with these bodies where such co-operation is desirable.

W. R. Wooldridge.

On the proposition of Mr. Male, the President was accorded a hearty vote of thanks for the very able way in which he had conducted the business of the meeting.

The proceedings then terminated.

Succentor (Rev. R. C. B. Llewellyn). Dr. A. W. Wilcock (Cathedral organist) conducted the musical service.

Among the mourners were the widow, Mr. R. Barons Nelder, M.R.C.V.S. (son) and Mr. T. Nelder (brother) while those present included the following representatives of the Western Counties Veterinary Medical Association: Mr. H. Fraser, M.R.C.V.S. (President), Major W. Ascott, M.R.C.V.S., Messrs. E. R. Edwards, F.R.C.V.S., W. Roach, F.R.C.V.S., and H. MacDonald, M.R.C.V.S. Other members of the profession present were Captain D. S. Barbour, M.R.C.V.S. (County Veterinary Officer), Messrs. C. H. Gibbings, F.R.C.V.S. (Tavistock), P. W. Bloye, M.R.C.V.S. (Plymouth) and E. J. L. Norman, M.R.C.V.S.

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GENERAL OBITUARY

Shave.—On October 14th, 1935, at 68, Lyford Road, Wandsworth Common, Rosa, the dearly-beloved wife of Edward Simpson Shave, of Bexhill, late of Camden Road.

The Late Mrs. E. S. Shave

A correspondent writes: "There must be many 'London' men, and past and present members of the staff at Camden Town who, in consequence of their happy association with Professor and Mrs. Shave during the long period when the teaching of anatomy there was in his supremely capable hands, will wish to unite with me in an expression of sympathy with Professor Shave in his great loss.

"In what has been termed the 'golden age' of the Royal Veterinary College as a teaching centre, when such stalwarts as M'Fadyean, Penberthy and Shave had such men as Hobday, Woodruff and Wooldridge as juniors, the supreme contribution of the Shaves was that they 'humanised' the atmosphere of dignity and authority so characteristic of the institution at that time. It was here that Mrs. Shave played a singularly important part. She it was who, for one thing, welded the staff together—through kindness and solicitude. For many years, before the War, *i.e.*, before they moved to Camden Road, the Shaves ran a large guest house for veterinary students in the St. Paul's Road and a large number of graduates can bear testimony to their hospitality. Mrs. Shave was possessed of an intense motherly instinct, which was expended on veterinary students who came under her care, while the generous sympathy of her nature was further evidenced in the untiring efforts she expended in good work towards Belgian refugees during the War."

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The Late H. W. Dudley, Ph.D., F.R.S.

In the course of a glowing tribute to the life and work of Dr. Harold Ward Dudley, who passed away recently at the age of 48, *The British Medical Journal* refers to his services to biochemistry and the chemical aspect of modern therapeutics, prosecuted in his capacity as chief biochemist on the staff of the Medical Research Council.

"One of the most formidable problems upon the elucidation of which he worked was that of the chemical nature of those constituents of the posterior lobe of the pituitary body which have such intense physiological activity and are of such great therapeutic importance. Dudley showed that the pressor constituent and the constituent responsible for causing contraction of uterine muscle were separable by chemical means. After a visit to Toronto to gain first-hand information about the discovery of insulin by Banting and Best, Dudley, on his return to this country, soon improved the small-scale manufacture of insulin; this resulted in an increased yield and in a product of great purity. The findings were immediately made available to hospital workers and manufacturers, with the result that insulin of high quality was early available in this country. Dudley's method of obtaining insulin in a dry, stable form, involving its preliminary precipitation as a picrate, enabled him to take charge of the final preparation of the first international standard of insulin.

Dudley later achieved the isolation of that extraordinarily labile substance, acetylcholine, from spleen, and in this connection the *Journal* says: "This proof of the occurrence of acetylcholine in the animal body has led to, and is still leading to, important developments in the physiology of the nervous system and its chemical control."

"During the last few years," proceeds the memoir, "Dudley devoted his attention to the chemistry of ergot. Until 1932 the nature of the active principles of ergot was regarded as a closed chapter, but the clinical observations of Dr. J. Chassar Moir proved the existence of a principle which acted promptly on uterine muscle when taken orally. The collaboration of Dudley and Moir led to the isolation and characterisation of a new simple water-soluble alkaloid, ergometrine, from ergot, which in minute doses had the characteristic activity of ergot. This discovery of ergometrine, made only a few months before Dudley's fatal illness, solves a long-outstanding problem of the pharmacology of ergot and its use in therapeutics."

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COLONIAL VETERINARY SCHOLARSHIPS

The following list gives the names of candidates selected for Colonial Veterinary Scholarships. Holders of these scholarships are, subject to vacancies being available, normally offered appointments in the Colonial Veterinary Service after completing their training satisfactorily: Biggar, W. S., Edinburgh; Randall, J. B., Cambridge, and Taylor, J. I., Queen's, Belfast.

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DOG LANDED FROM AEROPLANE WITHOUT A LICENCE

At the Croydon County Police Court on October 19th, Mrs. Roy Fox, whose address was given as the Angel Hotel, Cardiff, was fined 40s. on a summons by the Surrey Council Council for landing at Croydon Airport from abroad on September 23rd "a small dog black and brown with a short tail" without the licence of the Ministry of Agriculture. K.L.M. (Royal Dutch Air Lines), similarly summoned, were fined £5.

Mr. A. N. Moon, prosecuting, said that the maximum penalty was £50. Mrs. Fox travelled from Berlin *via* Amsterdam, and alighted at Croydon Aerodrome carrying a very small dog. When asked for the licence, she said that she understood that it had to be obtained on arriving. The dog was placed in quarantine.

He (Mr. Moon) understood that the company failed on this occasion to adopt its usual and

proper practice of getting, beforehand, from the owner or person in charge of the dog a declaration that a landing licence had been obtained. The Ministry and the council took a serious view about these cases. The Order was made to prevent the landing of dogs suffering from contagious diseases, and, particularly, to prevent rabies. In 1918 there was an outbreak of rabies in Devon and Cornwall through an infected dog having been smuggled into the country. It took three years before the effects of that action were wiped out. Since 1921 there had been no confirmed cases of rabies in this country, except that since 1919 twelve cases of rabies had occurred in imported dogs while undergoing quarantine. The reduction of rabies was entirely due to the regulations of the Ministry being strictly enforced. The disease was, he understood, still very prevalent on the Continent.

George A. Coppard, a Customs officer, said that on alighting Mrs. Fox greeted someone, and, holding up the dog explained, "I've got him."

The K.L.M. official at Croydon said that he told the Customs officer that if they found a dog it was not to be landed. The official looked for one, but apparently failed to see it because Mrs. Fox was wearing furs. His information was, he said, that no one saw the dog between Berlin and Croydon.

Mrs. Fox, in evidence, said that she was not aware that she had to have a landing permit for the dog, but knew that it would be quarantined. She spoke to someone at the Berlin aerodrome as to whether there was any fare to be paid for the dog. Nothing was said when she changed machines at Amsterdam.

Referring to the company, the Chairman (Mr. W. G. Storer) said that it had been negligent. To Mrs. Fox he said: "We are satisfied that you did not do it deliberately, but nevertheless it was a serious omission on your part."

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CHEMOTHERAPY OF PROTOZOAL AND BACTERIAL DISEASE

The British Medical Journal of October 12th, 1935, gives the following report of a lecture (and discussion thereupon) given at a recent meeting of the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine, by Professor H. Hörlein, of Düsseldorf Academy of Medicine, on the chemotherapy of infectious diseases caused by bacteria and protozoa. Professor Hörlein is well known for his work on the barbituric group of drugs and as the introducer of luminal.

Protozoal Diseases

Professor Hörlein began by saying that the possibility of combating infectious diseases with chemotherapeutically active substances depended to a large extent on the structure of the pathogenic organism. Apart from the cure of contagious pleuropneumonia in horses with neosalvarsan, there was as yet no chemotherapeutic substance which was active in virus diseases. The position was scarcely better with bacterial infections due to cocci and bacilli. These two types of infective agents occupied the lowest level in the scale of micro-organisms. On the other hand, the spirochætes, which also belonged to the bacteria group, and, still more so, those causal organisms belonging to the protozoa, represented relatively highly differentiated species, and the more highly developed a pathogenic organism was, the more points for attack it appeared to offer to the action of chemotherapeutic substances. It was therefore not to be wondered at that the best results with chemotherapeutically active substances had been obtained in spirochætal diseases, such as syphilis, relapsing fever, and framboesia, and above all in protozoal diseases. There was scarcely a protozoal disease of man which could not be cured nowadays by early treatment with the appropriate synthetic drug. He instanced sleeping sickness, malaria, amœbic dysentery and leishmaniasis. Epizoötics in animals, resembling human diseases, were also relatively easily dealt with by the same drugs as had been found of value in the treatment of disease in man. On the other hand there had been a lack of success up to the present in the treatment of those diseases of animals which were not generally related to the tropical diseases of man. The most important of these epizoötics were the piroplasmoses, which were caused by babesiæ and theileriæ, and were found not only in tropical and subtropical regions, but also in temperate zones. No species of domestic animal was spared by these diseases, but there were several difficulties in finding a substance which had a direct action against the piroplasmoses. A large number of subspecies of piroplasmoses existed, and owing to specific differences they were not all therapeutically influenced to the same extent and in the same way. Mixed infections of several subspecies of piroplasmoses often occurred in the same animal. He reviewed briefly the chemotherapy of the piroplasmoses during the last 25 years. There was a tendency to look upon these conditions as forms of animal malaria, and repeated attempts at treatment with quinine had been made; but the organisms concerned were unrelated to the malaria organisms. As a result of the knowledge gained by Nuttall and his collaborators, trypan-blue found a good deal of favour, but the large number of substances in addition to trypan-blue which were tried suggested that this preparation must have serious defects. In fact it had only a small sphere of therapeutic action. In mixed infections it was of avail against babesiasis, but not against theileriasis. Nor could a complete cure in any event be obtained with trypan-blue; all that happened was that an active infection was converted into a latent form. Afterwards trypaflavine was introduced. This had a larger field of therapeutic action, and its action was more intensive, but in spite of this it was not entirely satisfactory, apart from the fact that it was negative in theileriasis. The necessity of administering it intravenously also militated against its employment.

Lately a new remedy against piroplasmosis named acaprin had been brought out at Elberfeld, and was free from the above disadvantages. It had been tried out on the broadest lines upon domestic animals and under varying conditions in several countries and the reports showed that it might be regarded as a specific remedy for nearly all forms of piroplasmosis. Good results had been recorded in the case of dogs, cattle, horses, sheep and swine. It could be administered subcutaneously, intramuscularly, intravenously or perorally. There was no staining of the tissues, which was such a disadvantage with trypan-blue. Investigations showed that in toxic doses it gave rise to an excitation of the parasympathetic nervous system in experimental animals, but the symptoms of shock generally

passed off within about two hours, and the therapeutic action was not impaired by these toxic effects.

Bacterial Diseases

Turning to the chemotherapy of bacterial diseases, Professor Hörlein said that until lately this had not advanced beyond certain initial successes, and a deplorable pessimism seemed to have settled down on this field of work. The phenols and other derivatives showed great activity against organisms *in vitro*, but in the body they had no more than a local effect. A new class of substances of the sulphonic acid series with a distinct chemotherapeutic action in streptococcal infections had just been elaborated at Elberfeld under the names of prontosil and prontosil S. When given in large quantities the dye penetrated into all the tissues, and had a potent action on streptococci localised in various situations in the body. So far it had not been possible to demonstrate microscopically any large accumulations of the dye in particular organs or cells. It displayed an almost selective action for streptococcal infections of mice and rabbits. Whether it acted directly or indirectly on the organisms was not yet known. It had no particular action on streptococci *in vitro*, and acted only in the living body. It had some action also in staphylococcal infections. In clinical practice it had proved efficacious in scarlet fever and in certain forms of arthritis, but there had not yet been an opportunity of testing it in rheumatoid arthritis. Professor Hörlein concluded with the remark that further advances in the treatment of protozoal infections were almost certainly imminent, and a breach had also been made in the ramparts of bacterial diseases.

General Discussion

Dr. Manson-Bahr, from the chair, considered that what had been brought forward that evening constituted a milestone in chemotherapy. It appeared to offer a means of combating those streptococcal infections with which clinicians and pathologists were faced every day of their lives, and Professor Hörlein was certainly in the vanguard of chemotherapeutic discovery. He might perhaps be permitted to recall one brief passage of unpublished history. The late Sir Patrick Manson deserved the title in some respects of father of chemotherapy. In the early 'eighties, during a quinine famine in Hong-Kong, Manson used methylene-blue in the treatment of malaria; this had been shown to have a certain low specific action on the plasmodia. Manson was the first man to be able to demonstrate a methylene-blue stain in the plasmodia—a stain which he afterwards elaborated into that known as borax methylene-blue. It was Manson's idea that these particular dyes which had an affinity for the parasites would prove of therapeutic value, and that led up to Nuttall's work on trypan-blue. It was a great gratification to the speaker, on entering the German laboratory at Nazareth at the end of the war, to find in that ransacked place one unbroken bottle on the bench—a bottle of Manson's stain which the Germans on their side of the line had found advantageous in staining malarial parasites.

The subsequent discussion, in which Dr. Moreland McCrea, Dr. Anwyl Davies, Dr. A. H. Douthwaite, and others participated chiefly took the form of questions addressed to the lecturer on the new preparations he had mentioned. He replied that it was only nine months since the prontosil series had been liberated for clinical use, and only eleven papers as yet had been published on the subject in Germany. During the last six months Sir Henry Dale had been working on prontosil at Hampstead. About one thousand patients had been treated in Germany for streptococcal infections by means of this preparation, so far without visible signs of toxic reaction. The new drug had been tried in puerperal septicæmia, and there some of the best results had been obtained, though it was found desirable to give anti-streptococcal serum, at least in the preliminary experiments. Asked as to the objective effects of administering the drug, Professor Hörlein said that the temperature came down immediately after the oral administration of prontosil, and if afterwards the symptoms reappeared they yielded again to a further administration. The same dose was repeated each time, and there was no cumulative effect. Coloration appeared in the urine half an hour after administration, and the drug was completely eliminated from the body within an hour.

Although the discussion was principally on the possibilities of prontosil in streptococcal infections, the other preparation mentioned, acaprin, aroused some interest from the veterinarian point of view. Mr. J. T. Edwards, a veterinary surgeon, said that it seemed to him that the elaboration of acaprin was the most outstanding contribution to veterinary therapeutics since the discovery of trypan-blue in the treatment of the piroplasmoses. Although since Nuttall's discovery veterinarians had had a great weapon for the treatment of tropical piroplasmosis in cattle, that remedy had proved completely ineffective in the treatment of British red-water caused by *Babesia bovis*. Until recently veterinary science had been completely nonplussed by this infection. A remedy introduced a little previously to acaprin was a bismuth derivative named todorit, for which good results were claimed, but it seemed that this new discovery from Elberfeld was a great advance on anything hitherto available. In view of the fact that theileriasis was a most widely fatal condition for British cattle imported into India, an effective remedy would have very great economic value.

Correspondence

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

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NORTHERN IRELAND REPORT ON THE SPAHLINGER VACCINE

To the Editor of The Veterinary Record

Sir,—Personally, I am one of those misguided persons in the profession who accept the value of Spahlinger's vaccine as an immunising agent against bovine tuberculosis, not altogether on the results (as I see them) of the Northern Ireland experiment (which I hope to show had a very poor chance but yet gave results which, on analysis, prove the vaccine to have, not only an

immunising effect, but a curative one as well), but on the experiments as a whole.

Control Animals withstanding the "Mass" Inoculation of Living Tubercle Bacilli.—Two of the Northern Ireland calves were naturally immune to tuberculosis as were two in the Norfolk experiment. I believe that it is a well-established fact that a percentage of calves possess a natural resistance to tuberculosis, and I should think that the great majority of *adult* cattle are immune to the disease. This is proved without doubt by the results of tuberculin testing, where in general farming practice 40 per cent. of cattle which would react to the tuberculin test run, both in pasture and house, with cattle which *would* pass the tuberculin test. How this immunity is acquired does not really matter. The "fact" remains.

De-immunising Effect of Tuberculin Testing.—This "effect" does not arise in the Northern Ireland experiment. The eleven calves which constituted the *experiment proper* were *not tested.* These were the calves which were vaccinated, by different methods, with the "New" vaccine.

Epidemiological Requirements.—Surely tuberculosis does not come under the requirements of an "epidemic"!

Spahlinger states positively that, the vaccine being a prophylactic and not a curative preparation, it is essential that it should be administered *before* the calf contracts tuberculosis—therefore, *as soon as possible after birth.* "The vaccine is quite harmless." It does *not interfere with the results of a tuberculin test.* This was proved both in the Geneva tests and in the Norfolk test. "Tuberculin should not be used before vaccination," not that it would vitiate the result of the experiment, but in order that nothing pertaining to a tubercle bacillus should come in contact with experimental animals, which might be said of itself, to give some immunity.

In the Northern Ireland test Spahlinger's requirements as to the calves being vaccinated as soon as possible, were not adhered to, as the calves were from *four to five months old* before they were vaccinated. Had these calves been *days* instead of months old the results of the experiment would have been different. Under the circumstances *adult* untested cattle might as well have been used.

The result of the intradermal test on 16 of the 32 calves in February, May and June, 1932, *i.e.*, two, five and six months after vaccination (the vaccine as has been proved, does not interfere with the tuberculin test) when presumably they were six, nine and twelve months old, showed that nine calves were tuberculous, and in all probability were so *before they were vaccinated;* therefore, the calves were too old, and had contracted tuberculosis notwithstanding their origin before the experiment was initiated.

This was the initial mistake which makes an analysis of the experiment more formidable.

It seems to have been an omission on the part of the investigators that they failed (considering that they had already tested some of the calves) to subject these eleven calves to the tuberculin test, as nine out of 16 of the calves used for other experiments re-acted to tuberculin, and there was no knowledge as to whether any of the eleven calves used for the experiment proper, or all of them, were tuberculous before they were vaccinated—which to some extent vitiates the experiment, although every animal with the exception of one was passed as fit for human food, the disease being of a non-progressive character. They *all* reacted to the tuberculin test in *1934.*

Nevertheless, although in my opinion the calves were too old in this experiment, it does demonstrate that, even though calves may be tuberculous (as shown by the tuberculin test) plus the injection of a virulent dose of bacilli, the vaccine has the power to clump these bacilli, fix them, and encapsule them, thus preventing a spread of the disease. The vaccine shows not only an immunising power but a strongly curative one as well.

A careful study of the *post-mortem* findings convinces one that this is the case, especially in the case of A.9 where the mesenteric lymphatics were extensively affected—and the animal was in fat condition when she was killed 780 days after the test dose was administered. The lymphatics were caseous and only *a few* acid-fast organisms were found in the nodules. This seems to have been the case with most of the nodules of the whole of the eleven animals used in the experiment proper. In the case of A.30 the infection appears to have been generalised owing to the test dose not being altogether administered into the jugular vein, and this resulted in all superficial glands becoming infected. It seems, from the *post-mortem,* that the udder was infected from outside the body—by the teat canals—a re-infection.

A study of former experiments appears to make the above findings in the Northern Ireland experiment valid, and I think a short résumé of the results of those tests, or rather experiments, is called for.

(1) Early Swiss experiment, 1916-1923. Duration *seven years.* Twenty cows—*post-mortem* of these animals made between 1918 and 1922 failed to reveal *any* trace of tuberculosis. The tuberculin test does not seem to have been employed.

(2) December, 1925. Five calves vaccinated with "simplified" vaccine showed no trace of tuberculosis. They were tuberculin tested as well.

(3) 1925-1926. Seven calves were vaccinated and *were housed and herded* for eleven months among cattle suffering from tuberculosis. *All* the eleven vaccinated calves gave a *negative* reaction to the tuberculin test after eleven months.

(4) Seven calves were vaccinated in November and December, 1925. In November, 1926, received a hypervirulent dose of bacilli. Three of the vaccinated calves died from pneumonia—not tuberculous.

Of the four remaining calves, all of which remained perfectly well (as did ten out of the eleven of the Northern Ireland calves) one was killed and autopsied on January 5th, 1927, five weeks after the *controls* had died, another three months after, another at ten months, and one was killed and autopsied on October 10th, 1929, *three years* after. *In none of these animals were tuberculous lesions found.*

(5) Seventeen *calves* were used in this experiment. The results were: Two control (unvaccinated) calves died in 38 days. Six calves given the vaccine—either by rubbing it in to the skin or the mouth—died. The remaining eight, vaccinated either with large doses given "*per os*" or with small doses injected, were clinically examined and *tested with tuberculin* in November, 1928, 14 months after inoculation with the test virus. *They showed no sign of tuberculosis.*

Two were killed on November 7th, 1928, and their autopsy revealed *no trace* of tuberculosis.

The remaining six animals were examined and *tested with tuberculin* in August, 1929, and showed no signs of tuberculosis. They were all killed in October, 1929, *over two years* after inoculation with the test virus which killed controls in 38 *days*, and their autopsy showed no trace of tuberculosis *except in the case of one heifer* where a few small calcified (healed) tuberculous nodules were found.

(6) This experiment being concerned with technical questions of dosage, approaches somewhat the experiment in Northern Ireland. The animals were vaccinated by various doses—one was so small as to be negligible, and this calf died after the test dose was administered. The doses of vaccine were small, but given several times.

The vaccinated calves, together with six unvaccinated calves, were inoculated with the test virus on June 5th, 1928. The six *controls* died between the 18th and the 24th day after the test virus. Of the vaccinated calves, the calf which had the smallest dose died *two months after the controls*. One calf was killed *six months after the test dose*, and on autopsy was quite healthy and free from tuberculosis; another, killed nine months after test dose, had no tuberculous lesions but was suffering from another disease. The *remaining eight vaccinated calves* were *tested with tuberculin* more than *fourteen months after* the death of the controls and *the reaction was negative*. *Four* of these animals were killed during September and October, 1929, and were found to be free from tuberculosis.

The remaining four animals were again tested with tuberculin in September, *1930*, and the reaction was again negative. This was *over two years after they had been inoculated with the test dose of virulent bacilli*. Of these four animals, *two* were killed in October, 1930. In one of them a small pocket of pus was found in one of the lungs. This pus was injected into guinea-pigs—the result is not yet known (1930). The likelihood of its being tuberculous is, however, very remote since there was no evidence of tuberculosis in any of the animals' glands. The other animal was absolutely healthy and free from any "trace or suspicion of tuberculosis."

The two remaining vaccinated calves were still alive in *December, 1930*, and as the double intradermal and ophthalmic tuberculin tests made in September, 1930, were negative they may be considered to be free from tuberculosis.

This experiment was of the greatest importance, as it was found that *one single small dose* of the Spahlinger bovine vaccine, even when tested by massive injection of living tubercle bacilli which killed unvaccinated calves in from 18 to 24 days, gave complete immunity.

(7) Now we come to the "Norfolk" test in 1929-30. This test differs from the Swiss tests in that it was carried out (with the exception of the vaccinated calves being given the virulent test dose) *under the conditions of ordinary farming practice.*

The calves were bought in *the open market*, and were vaccinated immediately after a 20-mile-lorry drive on a bitterly cold winter day. Some were "scouring" and some had ringworm. They were *kept and housed* in ordinary farming conditions, and were fed on milk from cows *that reacted to tuberculin*. These calves must have been from *only a few days to about a fortnight old*. I practised in Norfolk for a number of years, and part of my work was to castrate these calves—as many as 70 at one time on one holding—so that I am conversant with the age at which the feeders of Norfolk buy them.

Eighteen calves were vaccinated. Each calf was given a *single dose* of vaccine, varying from a mere trace to a large dose (1 c.c., I believe). They were inoculated with the test dose in from four to six months after vaccination, by different methods (subcutaneous and interjugular). *Control* calves died about a month after the test dose. One vaccinated calf died on November 7th, three months after the control calves; this calf only received 0·1 c.c. of the vaccine.

The remaining 17 calves remained well and healthy. Later on, six of the calves were killed and *four showed no sign of tuberculosis* and *two* showed "a number of small nodules formed by a thick cartilaginous wall" but no active signs of tuberculosis.

The remaining 11 animals passed the *tuberculin test.*

I should think that the result of the foregoing experiments should convince the most hardened of sceptics that in Spahlinger's simplified vaccine we have *the* method of eradicating tuberculosis from our herds, at a small expense either to the farmer or the Government, and in a very few years. *The tuberculin test is the deciding factor as to whether the vaccine does immunise or not.*

Yours faithfully,

J. W. Hall Masheter.

Newnham-on-Severn.

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RESEARCH INTO EQUINE PNEUMONIA

To the Editor of The Veterinary Record

Sir,—I have carefully studied the rejoinder of Dr. Edwards to my observations on his review of certain aspects of the work of the Army Veterinary Services during the Great War. It would give me pleasure to be allowed to say that, in my opinion, Dr. Edwards has given your readers an accurate account of the facts of the research into and control of equine pneumonia in the British Army at that time, and that his deductions from those facts accord with my knowledge of what actually happened.

I am, however, bound to add that if it had not been for the impressive data given us by the negative results of Watkins-Pitchford's experiments, we should not have been able to exercise to the same clinical advantage the common sense with which Dr. Edwards has so generously credited us.

Yours faithfully,

Wakefield Rainey.

London.

October 19th, 1935.

The Editor acknowledges, with thanks, the receipt of the following:—

Communications from Mr. E. Chapman (Orpington), Mr. K. D. Downham (Newport, Salop), Mr. W. Gardner (Maybole), Dr. W. S. Gordon (Gilmerton), Dr. Russell Greig (Gilmerton), and Major-General Sir John Moore (London).

Reports of the Annual Meeting of the Society of Veterinary Practitioners, from Mr. H. W. Steele Bodger, Hon. Secretary, and of a meeting of the Victoria Veterinary Benevolent Fund Ladies' Guild, from Mrs. M. Nickinson, Hon. Secretary.